



## Section 4.6: Southwestern Michigan RTEP Overview

### 4.6.1 – Load and Generation

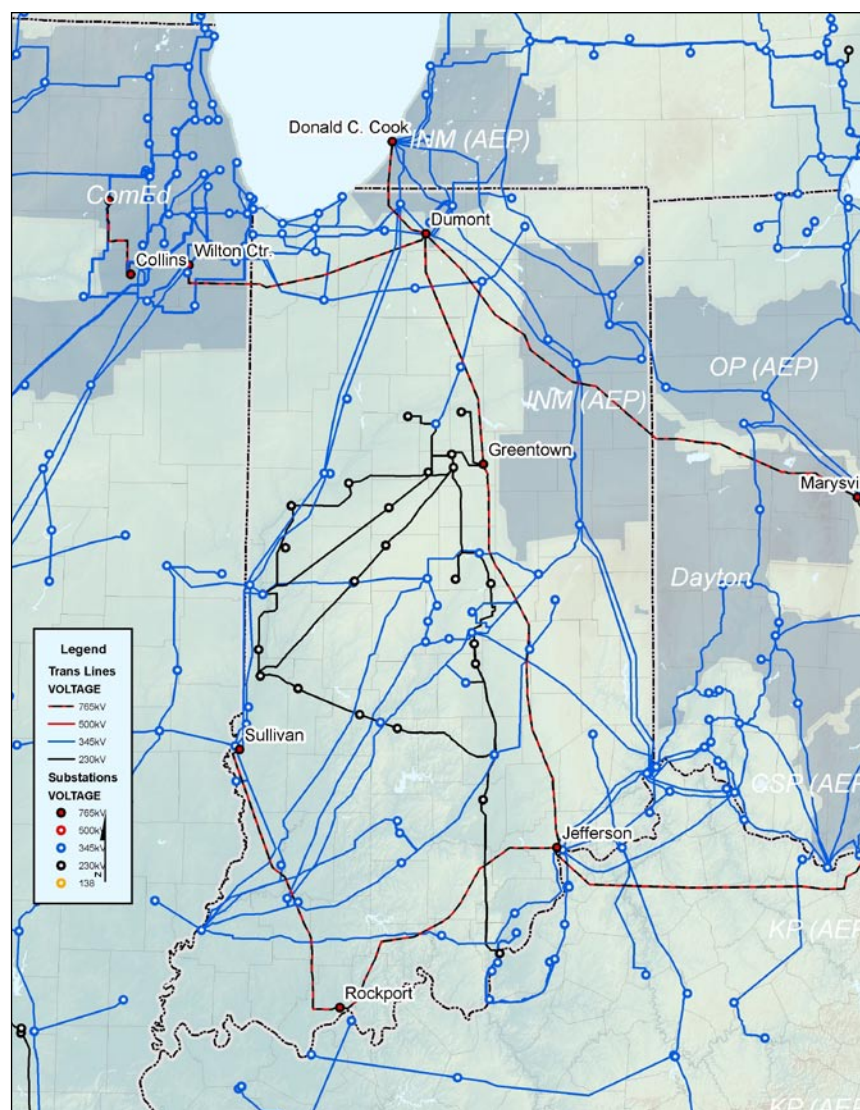
PJM operates the transmission system of the American Electric Power Company (AEP) Indiana Michigan Power (INM) sub-zone in northeastern Indiana and southwestern Michigan, as shown in **Map 4.6.1-1**. This AEP transmission service zone provides electric delivery service to INM customers and transmits energy to areas east and south on INM.

#### Load Growth

Customer load in southwestern Michigan and northeastern Indiana peaks during the summer. The forecasted 2005 summer peak load for the AEP INM sub-zone was 4,827 MW and has been forecasted to grow at an annual rate of 2.0 percent over the next 10 year period and is forecasted to reach 5,913 MW by the summer of 2015. The forecasted 2004/05 winter peak load served by AEP INM was 4,139 MW and is forecasted to grow at an annual rate of 1.6 percent over the next 10 year period, reaching 4,828 MW by the winter of 2014/15.

The forecasted loads cited above were those modeled in power flow studies used to develop PJM's RTEP through December 2005.

**Map 4.6.1-1:** PJM Area in Southwestern Michigan Served by AEP's INM Sub-zone



PJM's RTEP currently includes transmission upgrades in AEP's INM sub-zone to serve forecasted peak load through 2015. Beyond 2015, transmission system expansion may be needed to meet expected peak load levels.

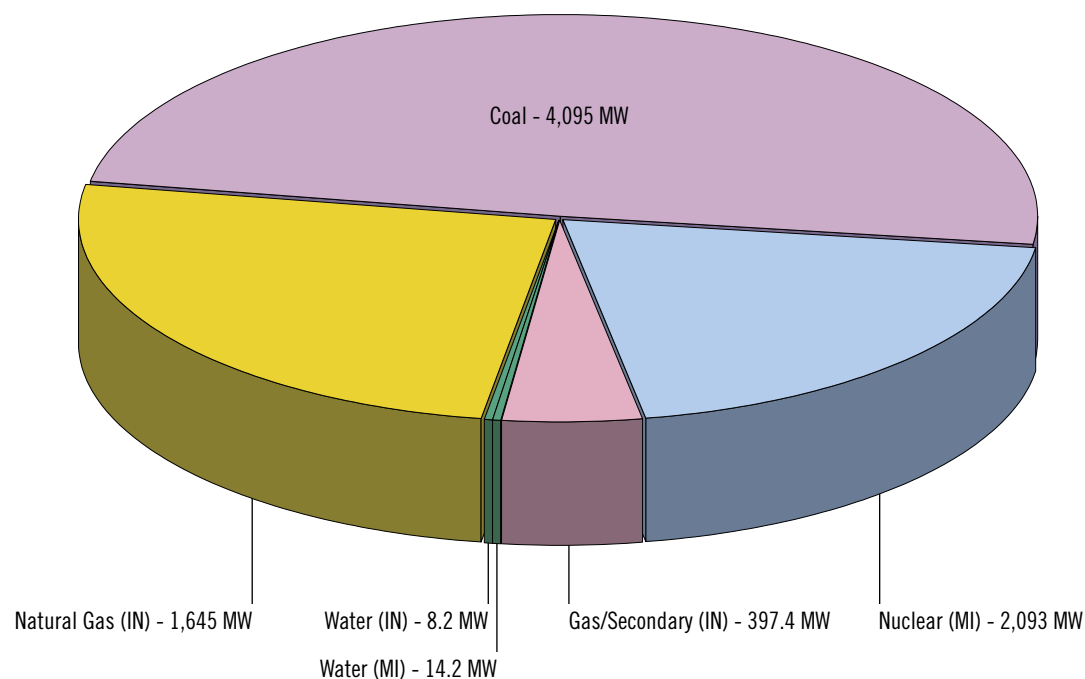
#### Existing Generating Capacity

**Figure 4.6.1-1** provides a snapshot of the existing installed capacity by fuel type in the AEP INM sub-zone served by PJM

#### 4.6.2 – Generator Interconnection Requests

PJM has received one queued interconnection request for an 84 MW capacity increase at the Cook nuclear generation facility in southwestern Michigan, as summarized in **Table 4.6.2-1** and shown in **Map 4.6.1-1**. From an RTEP development perspective, only the transmission enhancements associated with generator interconnection requests in Queue A through Queue N are included in the current RTEP. This particular interconnection request, Queue position O42, is presently in the earlier study phases of PJM's RTEP interconnection process. Any required upgrades will appear in upcoming RTEP recommendations to the PJM Board.

**Figure 4.6.1-1: Existing Installed Capacity by Fuel Type: PJM Area Served by AEP INM Sub-Zone**



**Table 4.6.2-1: Queued Generation Interconnection Requests in the PJM Area of Southwestern Michigan**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type	State
O42	Cook 345 kV	84	84	ACTIVE	10/1/06	AEP	Nuclear	MI

**Table 4.6.3-1: Major Transmission System Upgrades in the AEP INM Sub-Zone of Southwestern Michigan**

Map Ref.	Limiting Facility / Upgrade Description	System Upgrade Drivers								Date / Status	Cost	TO Zones	States
		Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TOI Upgrade	Transmission Service				
<b>1</b>	<b>Cook 345 kV Circuit Breakers</b>											AEP	MI
	Replace Six breakers at Cook 345 kV Station	X								June 2009	\$ 6.2 M	AEP	MI

#### 4.6.3 – Transmission Expansion Plans

**Table 4.6.3-1** summarizes the one major transmission upgrade in PJM's RTEP for the AEP INM sub-zone. Slated for 2009, circuit breaker upgrades at the Cook 345 kV substation to mitigate an identified baseline reliability constraint. The Cook substation is located in southwestern Michigan as shown in **Map 4.6.1-1**, earlier in this section.

#### 4.6.4 – Other Related RTEP Initiatives

##### **Wind Generation Projects**

No wind-powered generating projects have been proposed through PJM's interconnection queues for development in southwestern Michigan.

##### **Generator Deactivation Requests**

PJM has not received any requests for generator deactivations in southwestern Michigan.





## Section 4.7: New Jersey RTEP Overview

### 4.7.1 – Load and Generation

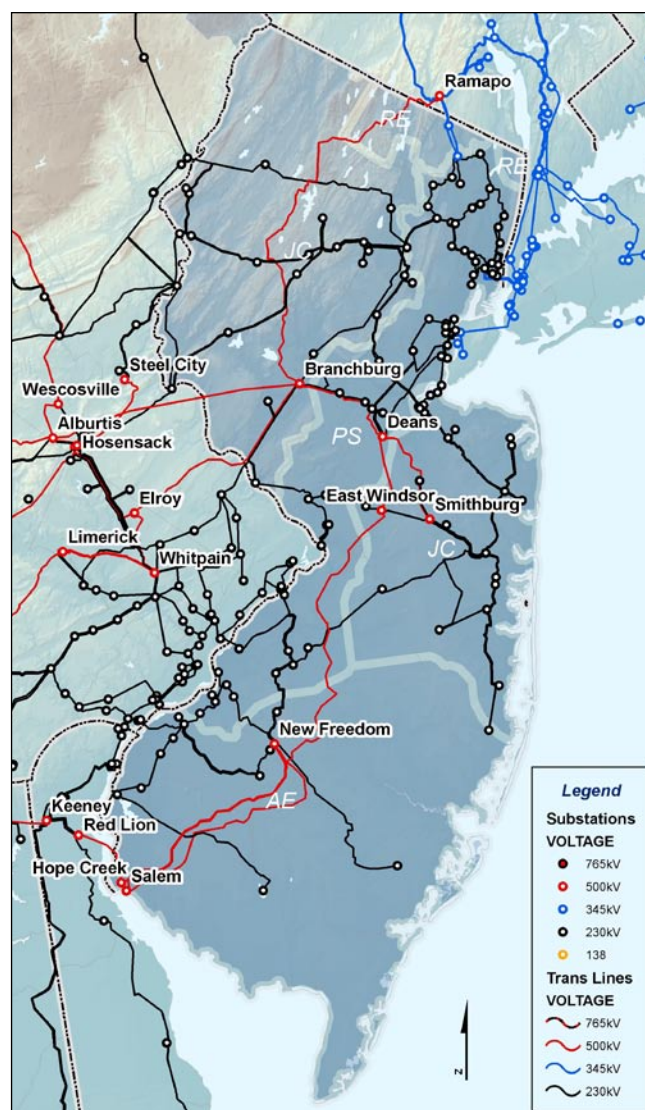
PJM operates the electric transmission system for several Transmission Owners in New Jersey: Atlantic Electric (AE), Jersey Central Power & Light (JCPL, a subsidiary of FE/GPU), Public Service Electric & Gas Company (PS) and Rockland Electric Company (RECO) as shown on **Map 4.7.1-1**. This transmission system delivers power to customers in New Jersey and transmits power to adjacent systems in New York across interregional tie-line facilities.

#### Load Growth

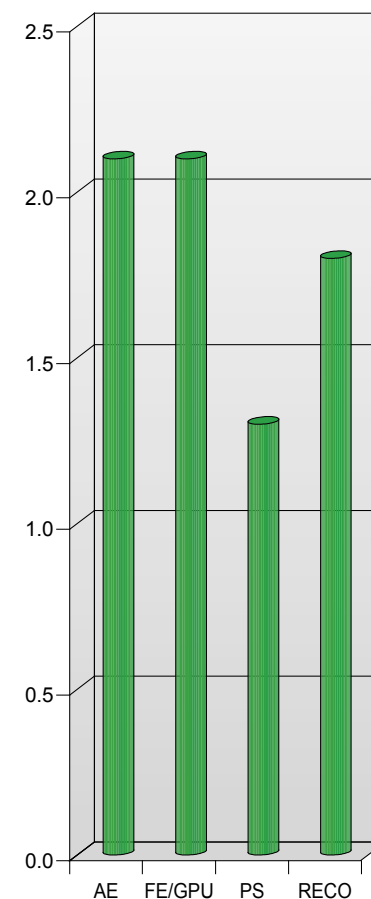
The forecasted 2005 summer peak load for New Jersey was 19,948 MW and has been forecasted to grow at an annual rate of 1.7 % over the next 10 years, reaching a forecasted 23,682 MW by 2015. The forecasted 2004/2005 winter peak load in New Jersey was 12,908 MW and has been forecasted to grow at an annual rate of 1.5 % over the next 10 years, reaching a forecasted 15,012 MW by winter 2014/15.

The forecasted loads cited above, and shown in **Figure 4.7.1-1**, were those modeled in power flow studies used to develop PJM's RTEP through December 2005. PJM's RTEP currently includes baseline transmission upgrades in New Jersey to meet expected 2009 peak load conditions. Beyond 2009, additional transmission system expansion will be needed to meet expected peak load supply requirements.

**Map 4.7.1-1:** PJM's New Jersey Service Area



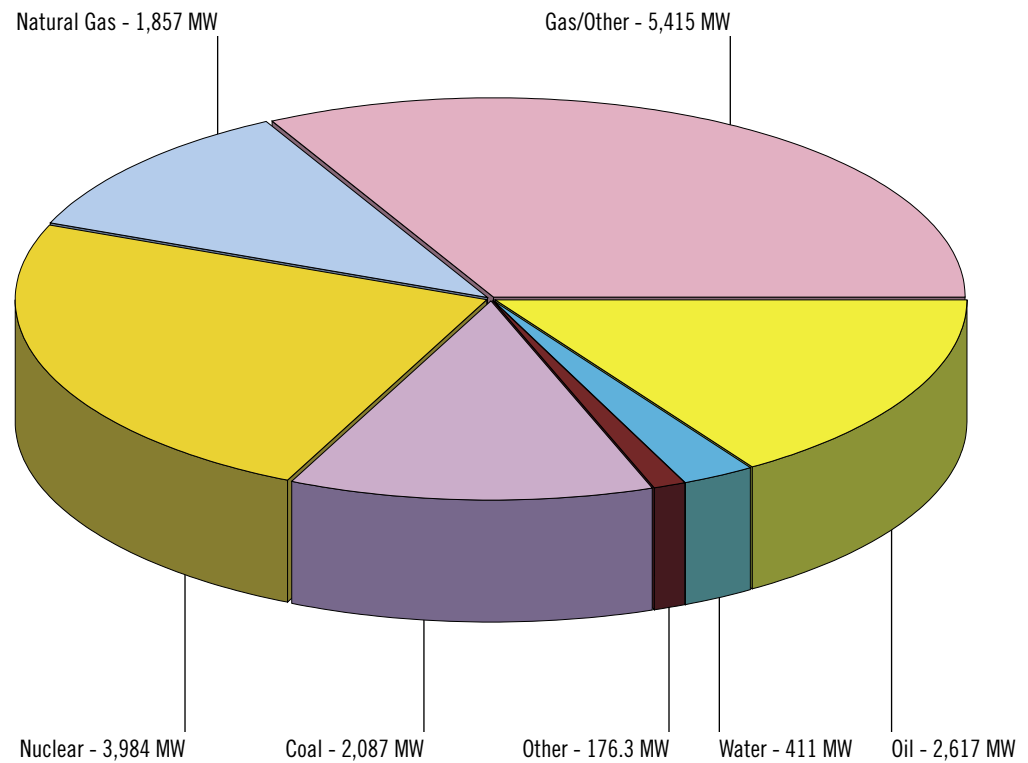
**Figure 4.7.1-1:** PJM Summer Peak Load Growth Rate



**Existing Generating Capability**

**Figure 4.7.1-2** provides a snapshot of the existing installed capacity by fuel type in the TO zones that serve New Jersey.

**Figure 4.7.1-2: Existing Installed Capacity by Fuel Type, in New Jersey**



## 4.7.2 – Generator Interconnection Requests

PJM has received interconnection requests for nearly 100 new generating resources proposed for installation in New Jersey since 1999, the current status for which is summarized below.

Status	# of Projects	MW
In-Service	28	2853
Under Construction	5	1240
Active (Under Study)	7	1680
Withdrawn	58	18513
TOTAL	98	24286

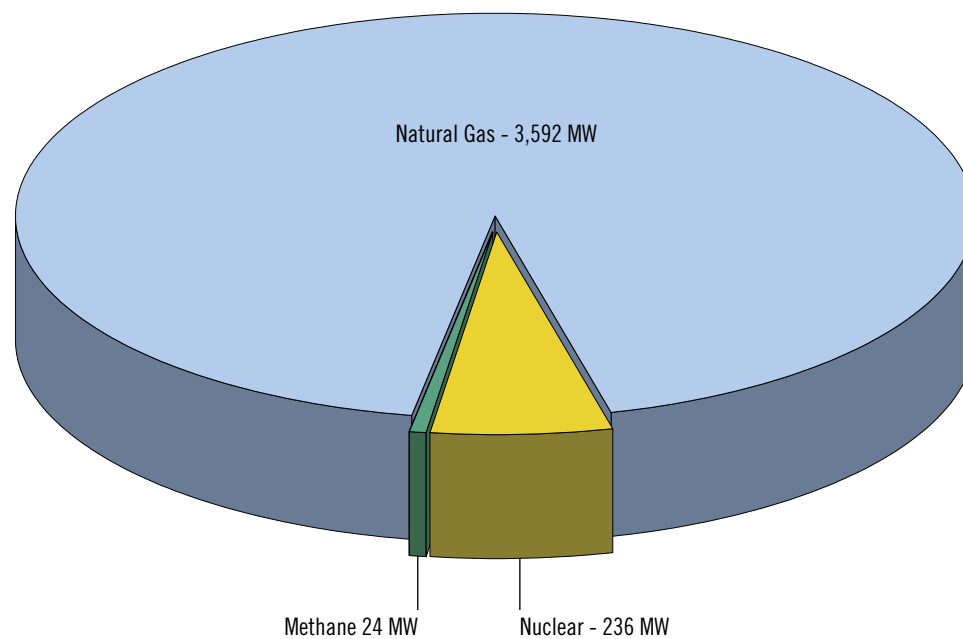
**Table 4.7.2-1** includes generating resource interconnection requests in PJM's Queues A through P that are under construction or active in PJM's interconnection process. A status code of "IS-NC" or "ISP" denotes a generating resource that is in-service but has not achieved full capacity status. Resources fully in-service (designated "IS") are included in the summary tabulation above, but are not separately enumerated in the expanded table that follows. Only transmission enhancements associated with generator interconnection requests in Queues A through N are presently included in PJM's RTEP. Requests in Queues O and P are presently in the Feasibility Study and System Impact Study phase of interconnection analysis.

**Table 4.7.2-1: Queued Generating Resource Interconnection Requests in New Jersey**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
A04	Linden 230 kV or 138 kV	750	750	UC	4/30/06	PSEG	Natural Gas
A55	Lakewood 230 kV	500	500	ISP	12/31/05	JCPL	Natural Gas
B19	Melrose 34.5 kV	20	20	IS-NC	4/6/01	JCPL	Natural Gas
C01	Linden 138 kV	436	436	UC	4/30/06	PSEG	Natural Gas
D08	Kearny 230 kV	168	168	IS-NC	8/4/01	PSEG	Natural Gas
G08	Kearny	7	7	IS-NC	6/30/01	PSEG	Natural Gas
G20	Essex	6	6	IS-NC	6/1/03	PSEG	Natural Gas
G24	Marion 26.4 kV	1.9	1.9	IS-NC	6/8/02	PSEG	Methane
H17	Salem 500 kV	115	115	ISP	6/1/08	PSEG	Nuclear
H18	Hope Creek 500 kV	78	78	ISP	12/1/07	PSEG	Nuclear
H19	Hope Creek 500 kV	43	43	UC	12/1/07	PSEG	Nuclear
H27	Marion 26.4 kV	1.9	1.9	IS-NC	12/1/02	PSEG	Methane
J05	Huron 69 kV	8	8	IS-NC	7/30/03	AE	Natural Gas
K04	Camden 26 kV	5		ISP	6/30/05	PSEG	Methane
L02	Pleasantville 12 kV	1.4	1.4	IS-NC	1/30/05	AE	Methane
N27	Pequest River 34.5 kV	4	4	UC	6/1/06	JCPL	Methane
O11	Bustelton 13 kV	7.125	7.1	UC	12/31/05	PSEG	Natural Gas
O20	Lakehurst 34.5 kV	9.6	9.6	ACTIVE	12/31/06	JCPL	Methane
O63	Linden 230 kV	525	525	ACTIVE	6/1/09	PSEG	Natural Gas
P06	Cumberland 230 kV	366	366	ACTIVE	12/31/08	AE	Natural Gas
P07	Middle 138 kV	122	122	ACTIVE	12/31/08	AE	Natural Gas
P13	Mickleton 230 kV	600	600	ACTIVE	12/31/09	AE	Natural Gas
P23	Bayonne 138 kV	55	55	ACTIVE	6/1/07	PSEG	Natural Gas
P35	Pleasantville	2	2	ACTIVE	7/31/06	AE	Natural Gas

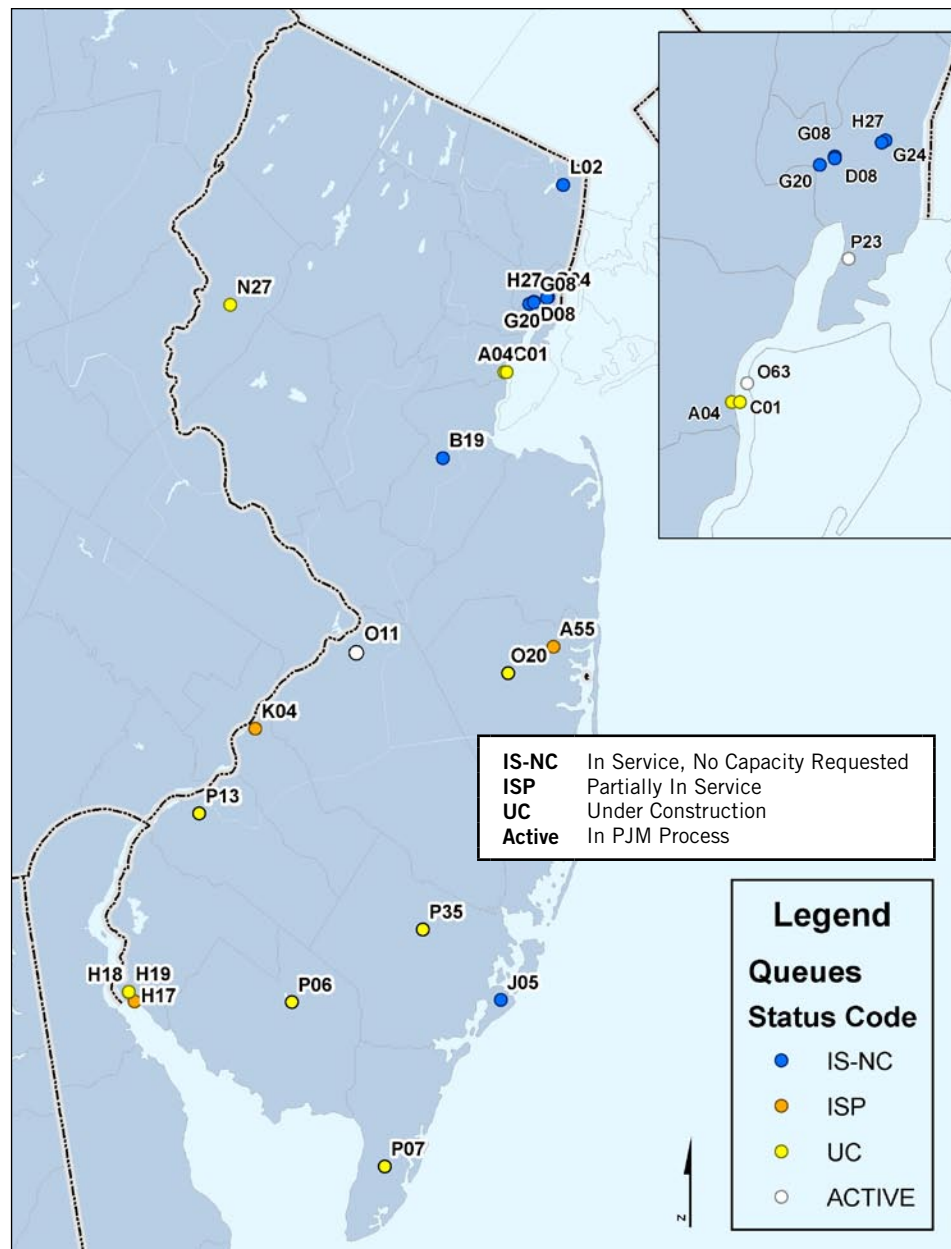
**Figure 4.7.2-1** shows the capacity rights requested, by fuel type, for generator interconnection requests in Queues A through P that are located in New Jersey and are in-service, under construction or are active in PJM's interconnection process.

**Figure 4.7.2-1:** Requested Capacity Rights by Fuel Type for Queued Generation Interconnection Requests in New Jersey



**Map 4.7.2-1** shows the location of each queued request in Table 4.7.2-1.

**Map 4.7.2-1: Location of Queued Generation Interconnection Requests in New Jersey**



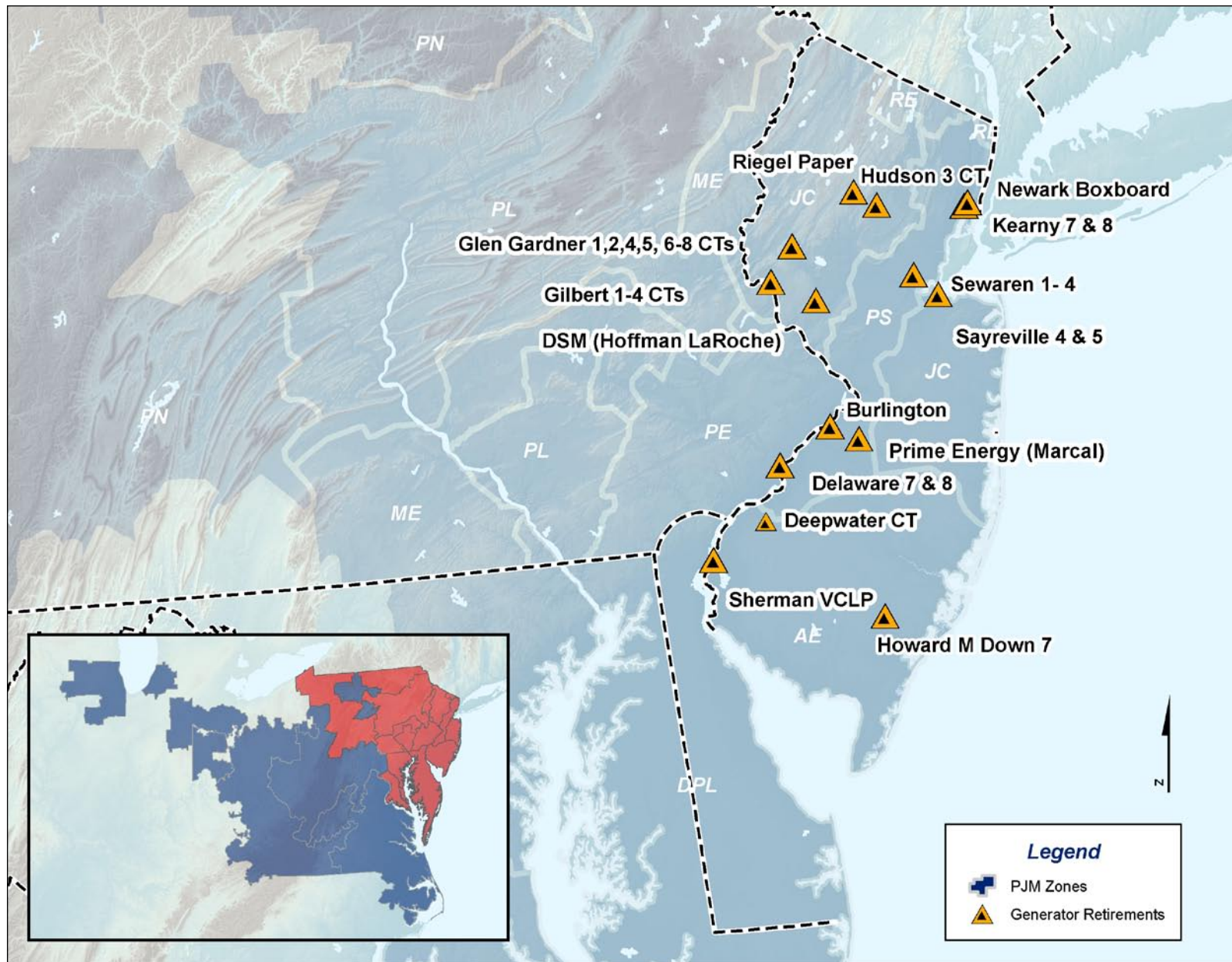
### Generator Deactivations

Known generator deactivations in New Jersey between 2003 and 2009 are summarized in **Table 4.7.2-2** and shown in **Map 4.7.2-2**. The absence of these units has a definable impact on baseline reliability in New Jersey, given 1.7 % load growth and sluggish new generation development. Major baseline reliability upgrades required to address baseline reliability issues driven by these deactivations are summarized in **Section 4.7.3**, below, together with other known baseline reliability transmission needs. In addition, **Section 3.1** earlier in this report addressed generator deactivation not only throughout New Jersey but throughout the rest of Eastern PJM as well. Neither New Jersey, nor any state within PJM, acts in isolation. All act under PJM's RTO umbrella as a single-entity. As a result, understanding system conditions throughout all Eastern PJM is key to understanding impacts on New Jersey.

**Table 4.7.2-2: Anticipated Generation Deactivations in New Jersey**

Retirement Date	Generator	TO	Capacity (MW)	Status
Oct-03	Hudson 3CT	PSEG	129	
Feb-04	Sayreville 4, 5	JCPL	229	
Apr-04	Burlington 101 - 105	PSEG	260	
Jun-04	Sherman VCLP	AE	47	
Jan-05	Riegel Paper	JCPL	27	
May-05	Deepwater CT A	AE	19	Request Apr 2005
Jun-05	Kearny 7, 8	PSEG	300	Request Dec 2004
Jun-05	Howard M Down 7	AE	8	
Oct-05	DSM (Hoffman LaRoche)	JCPL	9	
Oct-05	Newark Boxboard	PSEG	52	Request Oct 2005, issue resolution target 2007
Jan-06	Prime Energy (Marcal)	PSEG	47	
2006	Glen Gardner 1 & 5	JCPL	40	Request Feb 2004, Deferred
2006	Gilbert 1 & 4	JCPL	50	Request Feb 2004, Deferred
2007	BL England 1-3, IC1-IC4	AE	447	Request Dec 2007, issue resolution target 2007
2008	Hudson 1	PSEG	383	Request Dec 2004, issue resolution target 2008
2008	Sewaren 1-4	PSEG	455	Request Dec 2004, issue resolution target 2008
Total			2,502	

**Map 4.7.2-2: Location of Generator Deactivations in New Jersey**



### 4.7.3 – Merchant Transmission Interconnection Requests

Presently, four merchant transmission interconnection requests are queued in PJM whose development includes New Jersey as a terminus within PJM, as enumerated in **Table 4.7.3-1** and shown on **Map 4.7.3-1**.

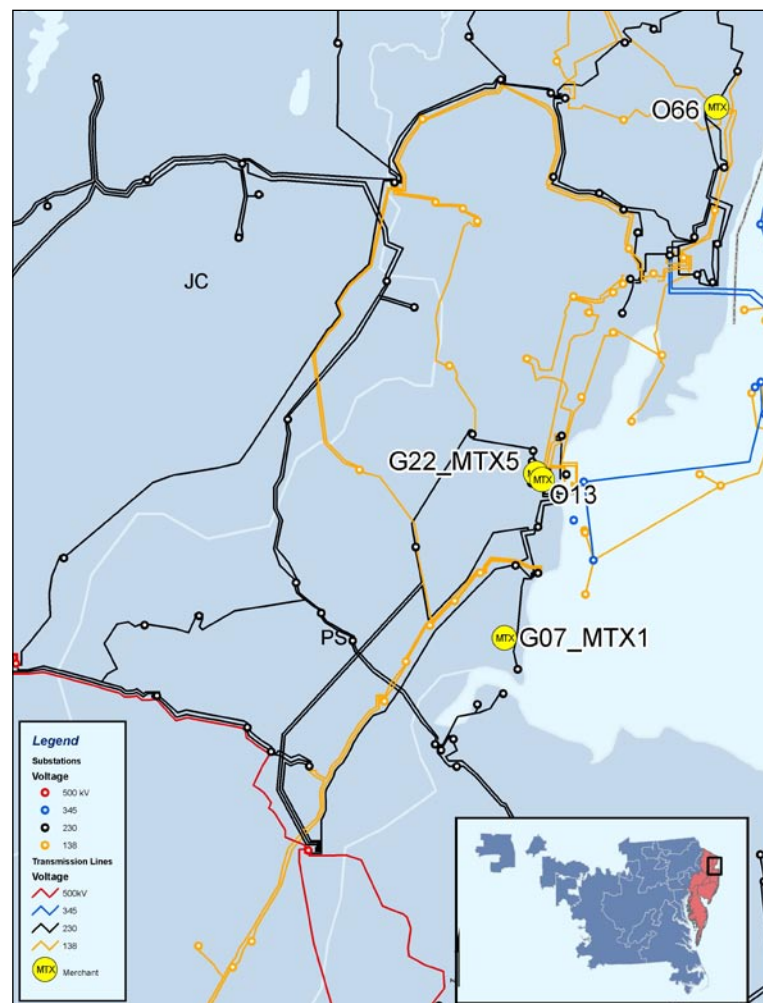
PJM's RTEP, representing plans completed and approved by the PJM Board through December 2005, presently only encompasses the upgrades required to accommodate generation interconnection and merchant transmission interconnection in Queues A through N. The merchant transmission interconnection requests in Queue O and P are presently in initial study phases of PJM's interconnection process out of which the recommended transmission upgrades will be included in a near-future RTEP update. (Additional information on the impact of merchant transmission interconnection requests, in Queues A through N, throughout PJM can be found in **Section 3.7** of this report.)

As for the two merchant transmission interconnection requests in Queue G with terminals in New Jersey, the requested withdrawal rights associated with these two projects permit PJM market participants to export capacity and energy to New York and systems beyond from generation resources based in PJM, to its west and to its south. The 2009 anticipated system conditions studies have revealed the need for significant upgrades to accommodate these facilities based on the implicit need to have sufficient transmission in place to 'deliver' up to 1090 MW (collectively) to the New Jersey terminals of these facilities. In essence, operated in this mode, the facilities appear to PJM as a net increase in load in New

**Table 4.7.3-1: Merchant Transmission Interconnection Request Queue Activity**

Queue	Project Name	MW	Type	Status	Schedule	TO
G07_MTX1	Sayreville 230 kV	790	DC	UC	6/30/07	JCPL
G22_MTX5	Linden 230 kV	300	VFT	UC	4/4/07	PSEG
O13	Linden - Harbor Cable II	520	DC	ACTIVE	2/1/08	PSEG
O66	Bergen 230 kV	670	DC	ACTIVE	7/1/09	PSEG

**Map 4.7.3-1: Locations of Merchant Transmission Interconnection Requests in New Jersey**



Jersey. The transmission enhancements required for these facilities are discussed in more detail in **Section 3.7**.

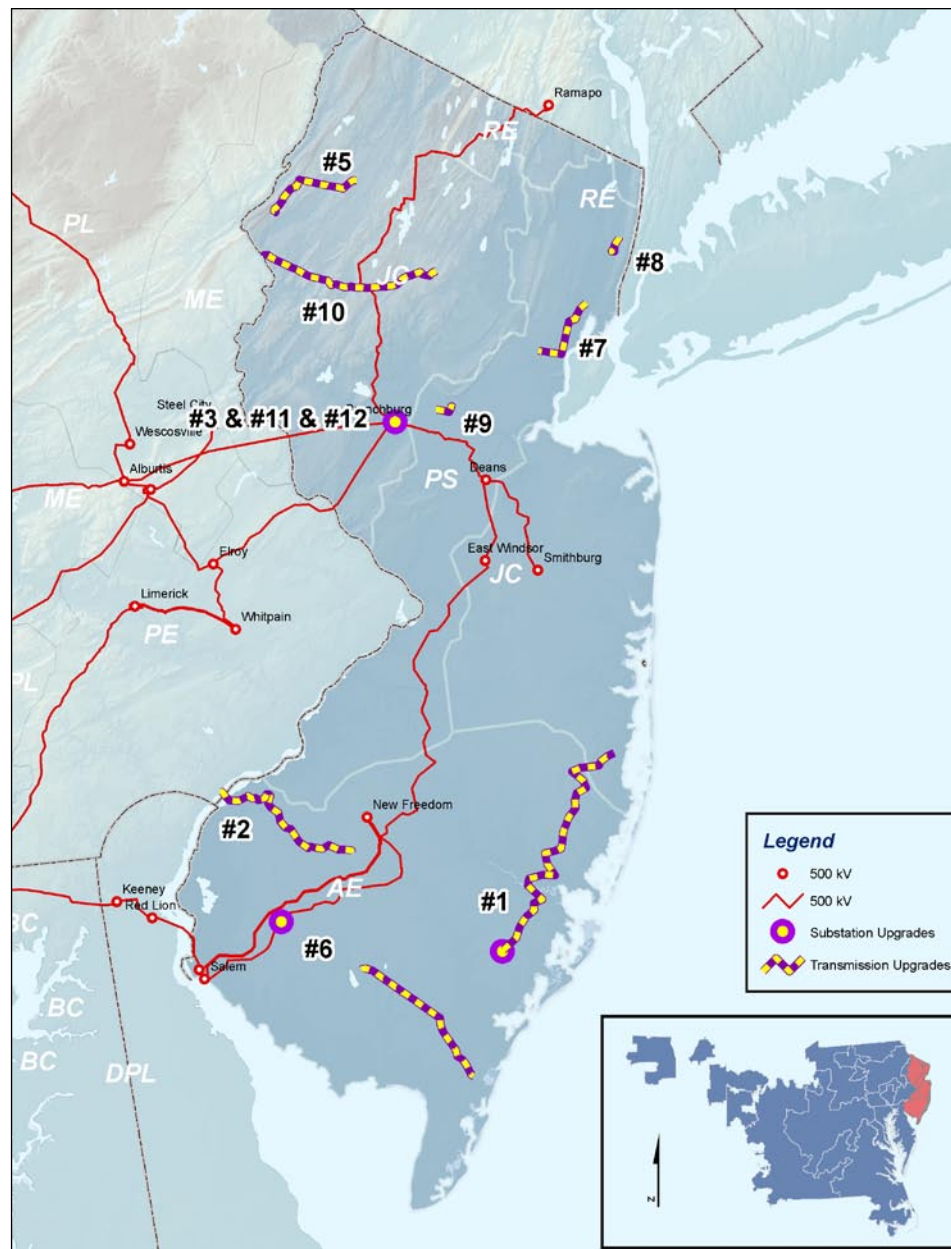
#### 4.7.4 – Transmission Expansion Plans

**Table 4.7.4-1** summarizes the planned transmission upgrades presently in PJM's RTEP for New Jersey, as shown in **Map 4.7.4-1**. As the Table notes, drivers of such upgrades include baseline reliability, generation interconnection requests and TOIs local reliability issues. As indicated earlier, merchant transmission requests are addressed in **Section 3.7**.

In essence, the system reliability trends that have emerged in New Jersey, and throughout eastern PJM, over the past seven years constitute a classic study of planning for a system that faces growing customer demand, sluggish generating resource additions and reliance on transmission system facilities to bridge the two. Continued load growth, retirement of existing generation resources, sluggish development of new generating resources and continued reliance on transmission to meet load deliverability requirements and provide access to cheaper sources of power west of this area, are collectively making additional negative inroads on sustained system reliability in New Jersey and throughout eastern PJM.

The extent to which eastern PJM continues to rely on transfers into the area to meet load-serving needs also has a definable, negative impact on the high voltage backbone transmission system in other parts of PJM, notably that area of PJM's transmission system west and northwest of the Baltimore and Washington metropolitan areas. All these issues are discussed in more detail in **Section 3.1** and **Section 3.3** earlier in this report.

**Map 4.7.4-1: Locations of RTEP Upgrades for New Jersey**



**Table 4.7.4-1: Major Transmission Upgrades in New Jersey**

		System Upgrade Drivers											
		Baseline Load Growth/ Deliverability & Reliability	Baseline Upgrades			Network Upgrades		TOI Upgrade	Transmission Service				
Map Ref.	Limiting Facility / Upgrade Description		Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TO – Local Issue	Long-term Firm Transmission Service	Date / Status	Cost	TO Zones	States
1	Cardiff-Oyster Creek 230 kV Circuit											AE	NJ
	Construct four breaker ring bus and install dynamic reactive device at Cardiff	X								April 2003	\$ 13.9 M	AE	NJ
	Construct new 230 kV circuit between Cardiff and Oyster Creek	X								June 2005	\$ 58 M	AE	NJ
2	Mickleton 230 kV Circuits											AE	NJ
	Add 2nd Mickleton - Monroe 230 kV circuit					X				June 2003	\$ 11.48 M	AE	NJ
	Mickleton - Trainer 230 kV reconductor	X								May 2009	\$ 14 M	AE	NJ
3	Branchburg 500/230 kV Substation											PSEG	NJ
	Install third Branchburg 500/230 kV transformer	X								April 2005	\$ 15 M	PSEG	NJ
	Replace all de-rated Branchburg 500/230 kV transformers	X								January 2007	\$ 20 M	PSEG	NJ
4	PSEG Transformer Replacements											PSEG	NJ
	Replace thirteen transmission class transformers and associated equipment							X		June 2006	\$ 18.8 M	PSEG	NJ
5	Kittatinny-Newton 230 kV Circuit											PSEG	NJ
	Reconductor Kittatinny – Newton 230 kV with 1590 ACSS	X								June 2007	\$ 20 M	PSEG	NJ

**Table 4.7.4-1: Major Transmission Upgrades in New Jersey Served, Continued**

Map Ref.	Limiting Facility / Upgrade Description	System Upgrade Drivers								Date / Status	Cost	TO Zones	States
		Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TOI Upgrade	Transmission Service				
<b>6</b>	<b>AE Transmission Voltage Circuits</b>											AE	NJ
	Build new Cumberland – Dennis 230 kV circuit which replaces existing Cumberland – Corson 138 kV	X								December 2007	\$ 17.05 M	AE	NJ
	Install Dennis 230/138 kV, Dennis 150 MVAR dynamic reactive device and 50 MVAR capacitor	X								December 2007	\$ 27.45 M	AE	NJ
	Install a new 500/230 kV substation in AE area, the high side will be tapped on the Salem - East Windsor 500 kV circuit and the low side will be tapped on the Churchtown - Cumberland 230 kV circuit.	X								May 2008	\$ 52.09 M	AE	NJ
<b>7</b>	<b>Essex-Aldene 230 kV Circuits</b>											PSEG	NJ
	Build new Essex – Aldene 230 kV cable connected through a phase angle regulator at Essex	X								May 2007	\$ 40 M	PSEG	NJ
<b>8</b>	<b>Bergen-Leonia Circuit</b>											PSEG	NJ
	Convert the Bergen-Leonia 138 kV circuit to 230 kV circuit.	X								May 2008	\$ 20 M	PSEG	NJ
<b>9</b>	<b>Flagtown-Somerville-Bridgewater Circuit</b>											PSEG	NJ
	Reconductor the Flagtown-Somerville-Bridgewater 230 kV circuit with 1590 ACSS	X								June 2008	\$ 12 M	PSEG	NJ

**Table 4.7.4-1: Major Transmission Upgrades in New Jersey Served, Continued**

		System Upgrade Drivers												
		Baseline Upgrades				Network Upgrades		TOI Upgrade	Transmission Service					
Map Ref.	Limiting Facility / Upgrade Description	Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TO – Local Issue	Long-term Firm Transmission Service	Date / Status	Cost	TO Zones	States	
10	Portland-Greystone 230 kV Circuit												JCPL	NJ
	Upgrade the Portland – Greystone 230 kV circuit	X								June 2008	\$ 20 M	JCPL	NJ	
11	Branchburg 500/230 kV transformer												PSEG	NJ
	Replace all de-rated Branchburg 500/230 kV transformers	X								January 2007	\$ 20 M	PSEG	NJ	
12	Martins Creek - Branchburg 230 kV transformer												PPL	NJ
	Six wire Martins Creek - Morris Park - Gilbert 230 kV (160 C)					X				December 2003	\$ 7.6 M	PPL	NJ	



## Section 4.8: Northeastern North Carolina RTEP Overview

### 4.8.1 – Load and Generation

PJM operates the transmission system of Dominion Resources in northeastern North Carolina as shown on **Map 4.8.1-1**.

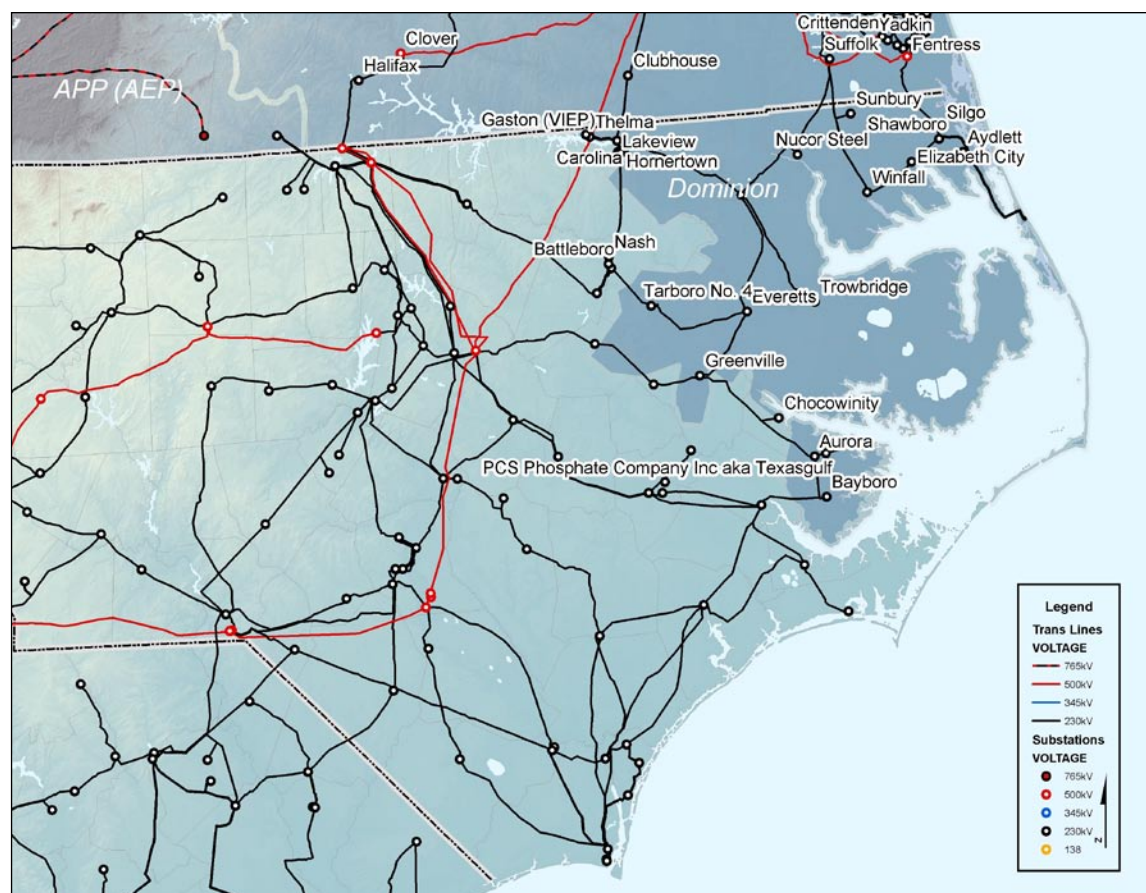
#### Load Growth

The 2005 summer peak load served by Dominion in northeastern North Carolina and the adjacent portion of central and eastern Virginia reached 17,817 MW and has been forecasted to grow at an annual rate of 1.8 percent over the next 9 year period, reaching a forecasted 20,950 MW by the summer of 2014. The forecasted 2004/05 winter peak load served by Dominion in northeastern North Carolina and the adjacent portion of central and eastern Virginia reached 16,018 MW and has been forecasted to grow at an annual rate of 1.6 percent over the next 9 year period, reaching a forecasted 18,467 MW by the winter period of 2013/14.

The forecasted loads cited previously were modeled in the power flow studies used to develop PJM's RTEP through December 2005.

The as-planned transmission system in Northeastern North Carolina is expected meet forecasted 2009 peak load conditions. Beyond 2009, additional transmission system expansion may be needed to meet expected peak load supply requirements.

Map 4.8.1-1: North Carolina Area Served by PJM



### Existing Generating Capacity

**Figure 4.8.1-1** provides a snapshot of the existing installed capacity by fuel type in northeastern North Carolina.

#### 4.8.2 – New Generator Interconnections

Since Dominion joined PJM in 2005, PJM has received one generation interconnection request – queue position P43 - for a 62.5 MW wood burning plant to be located near the Trowbridge 115 kV bus, which can be found on **Map 4.8.1-1**. This project, because of its position in the 'P' interconnection queue, is still in initial study phase. Any transmission upgrades required for interconnection will appear in an upcoming RTEP.

#### 4.8.3 – Transmission Expansion Plans

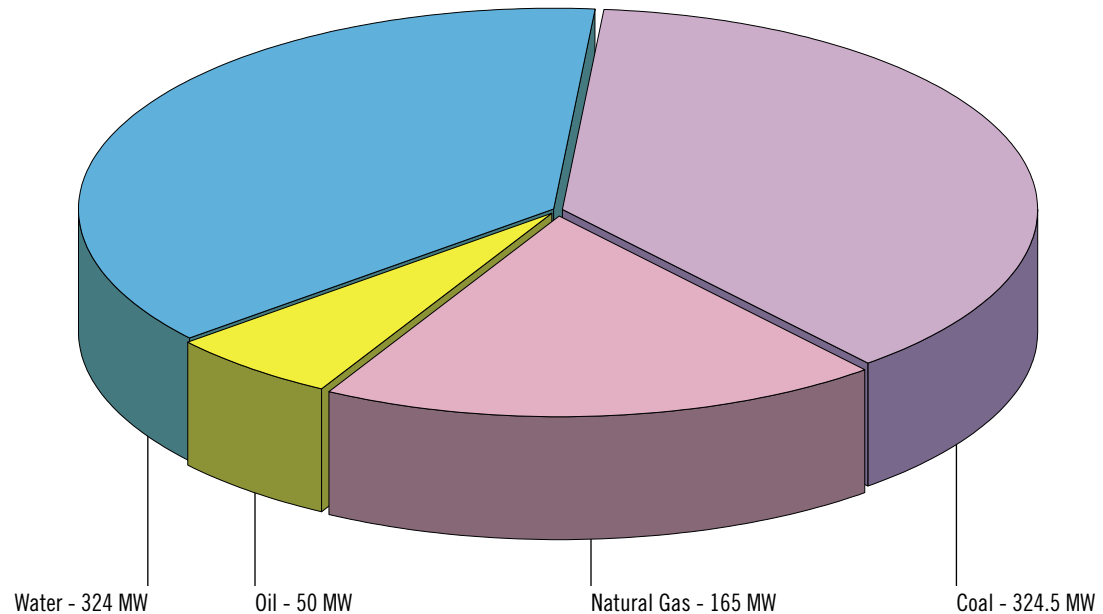
PJM's RTEP presently does not include any significant transmission upgrades for northeastern North Carolina.

#### 4.8.4 – Other Related RTEP Initiatives

#### Wind Generation Projects Under Development Northeastern North Carolina

No wind farm projects have submitted interconnection requests for development in northeastern North Carolina.

**Figure 4.8.1-1: Existing Installed Capacity in Northeastern North Carolina Area Served by PJM**





## Section 4.9: Ohio RTEP Overview

### 4.9.1 – Load and Generation

The PJM operates the transmission systems of several Transmission Owners in Ohio: the Columbus Southern Power (CSP) and the Ohio Power (OP) sub-zones of American Electric Power (AEP) and Dayton Power & Light (DAY) as shown on **Map 4.9.1-1**. The PJM operated portion of Ohio's transmissions system provides electric delivery service to customers in Ohio and also transmits energy from west to east to major PJM load centers to the east and southeast.

**Map 4.9.1-1: PJM Transmission System in Ohio**



### Load Growth

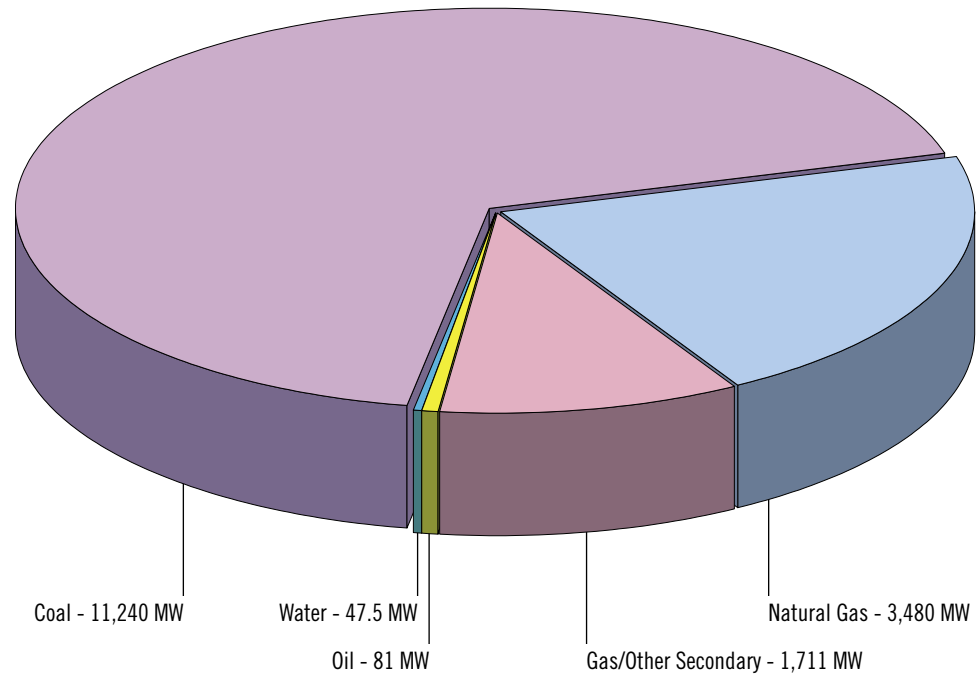
The forecasted 2005 summer peak load served by the CSP(AEP), OP(AEP) and Dayton in Ohio was 14,804 MW and is forecasted to grow at an annual rate of 1.8% over the next 10 year period, reaching 17,693 MW by the summer of 2015. The forecasted 2004/05 winter peak load was 12,955 MW and is forecasted to grow at an annual rate of 1.6 percent over the next 10 year period, reaching 15,133 MW by the winter of 2014-15.

The forecasted loads cited above were modeled in the power flow studies used to develop PJM's RTEP through December 2005.

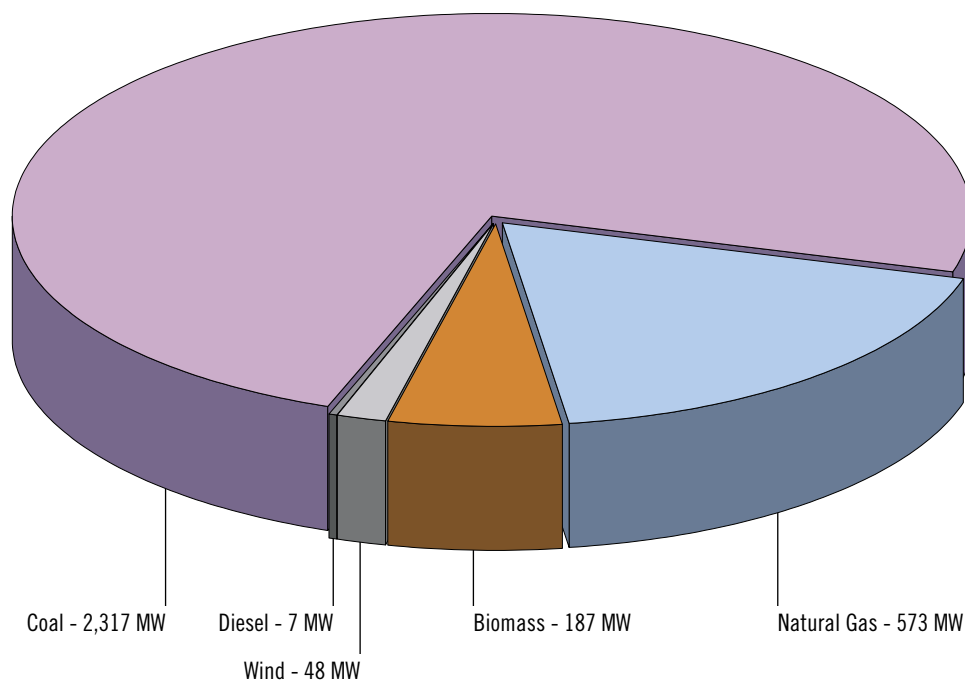
### Existing Generating Capacity

Figure 4.9.1-1 provides a snapshot of the existing installed capacity by fuel type in Ohio.

**Figure 4.9.1-1: Existing Installed Capacity by Fuel Type for Generation in Ohio Area Served by PJM**



**Figure 4.9.2-1: Capacity Rights by Fuel Type for Queued Generator Interconnection Requests in Ohio**



**Table 4.9.2-1: PJM Queued Generation in Ohio**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
L01_AEP137	Bellefonte-N. Proctorville 138 kV	165	165	ACTIVE	1/1/07	AEP	Biomass
N12	North Haverhill 69 kV	75		ACTIVE	1/1/07	AEP	Coal
N42	Sporn-Waterford 345 kV	600	600	ACTIVE	5/1/10	AEP	Coal
O21	Liberty 69 kV	48	9.6	ACTIVE	12/15/06	Dayton	Wind
P02	Ohio Central 138 kV	550	550	ACTIVE	6/1/07	AEP	Natural Gas
P30	Bellefonte - N. Proctorville 138 kV	20	20	ACTIVE	10/31/07	AEP	BioMass
P44	City of Columbus	7	7	ACTIVE	3/15/06	AEP	Diesel
P49	Adkins 345 kV	9	9	ACTIVE	1/19/06	Dayton	Natural Gas
P50	Greenville 69 kV	14	14	ACTIVE	1/19/06	Dayton	Natural Gas
P51	Stuart 345 kV	7	7	ACTIVE	1/25/06	Dayton	Coal
P54	Sporn - Waterford 345 kV	1035	1035	ACTIVE	5/1/12	AEP	Coal
P55	West Lima 138 kV	600	600	ACTIVE	10/1/08	AEP	Coal
P61	Gavin #1 765 kV	20	20	ACTIVE	5/1/06	AEP	Coal
P62	Gavin #2 765 kV	20	20	ACTIVE	5/1/07	AEP	Coal

## 4.9.2 – Generator Interconnection Requests

PJM has received interconnection requests for numerous new generation facilities proposed for installation in Ohio since 2004.

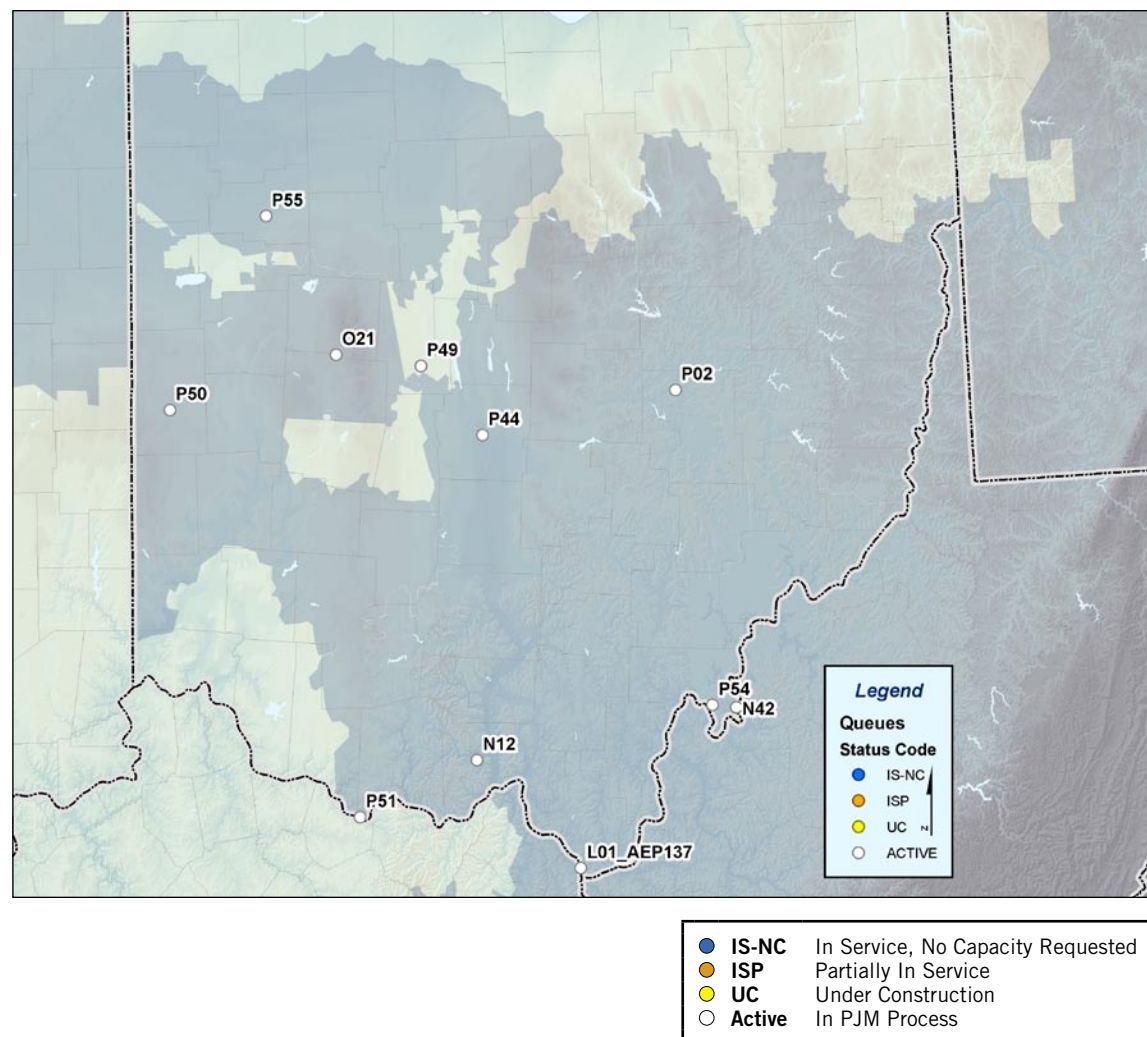
Status	# of Projects	MW
In-Service	0	0
Under Construction	0	0
Active (Under Study)	14	3,170
Withdrawn	3	2,520
<b>TOTAL</b>	<b>17</b>	<b>5,690</b>

**Table 4.9.2-1** includes queued generation requests in Queue A through Queue P that are under construction or active in PJM's interconnection process. A status code of "IS-NC" or "ISP" denotes a generating resource that is in-service but has not achieved full capacity status. Resources fully in-service (designated "IS") are included in the summary tabulation above, but are not separately enumerated in **Table 4.9.2-1**. Only the transmission enhancements associated with generators in Queue A through Queue N are included in the current PJM RTEP. Interconnection requests in Queue O and Queue P are presently in the Feasibility Study or System Impact Study phase of interconnection analysis.

**Figure 4.9.2-1** shows capacity by fuel type for all active generator interconnection requests in PJM queues for Ohio

Map 4.9.2-1 shows the location of each queued request in the Table 4.9.2-1.

Map 4.9.2-1: Location of Queued Generation Requests in Ohio



### 4.9.3 – Transmission Expansion Plans

Major transmission system expansions planned for Ohio are summarized in **Table 4.9.3-1** (on the following page) and shown in **Map 4.9.3-1**. As the Table notes, key drivers of these upgrades includes baseline reliability, generation interconnection requests and TOI local reliability issues.

### 4.9.4 – Other Related RTEP Initiatives

#### **Wind Generation Projects**

Wind projects generally develop in those geographic areas with favorable wind frequency and duration characteristics. At present only one wind-powered project interconnection request is currently being analyzed by PJM: Project O21, listed in **Table 4.9.2-1** and shown in **Map 4.9.2-1**. Any required upgrades for this interconnection request will be included in the next RTEP.

**Map 4.9.3-1: Location of PJM Planned Transmission Upgrades in Ohio**

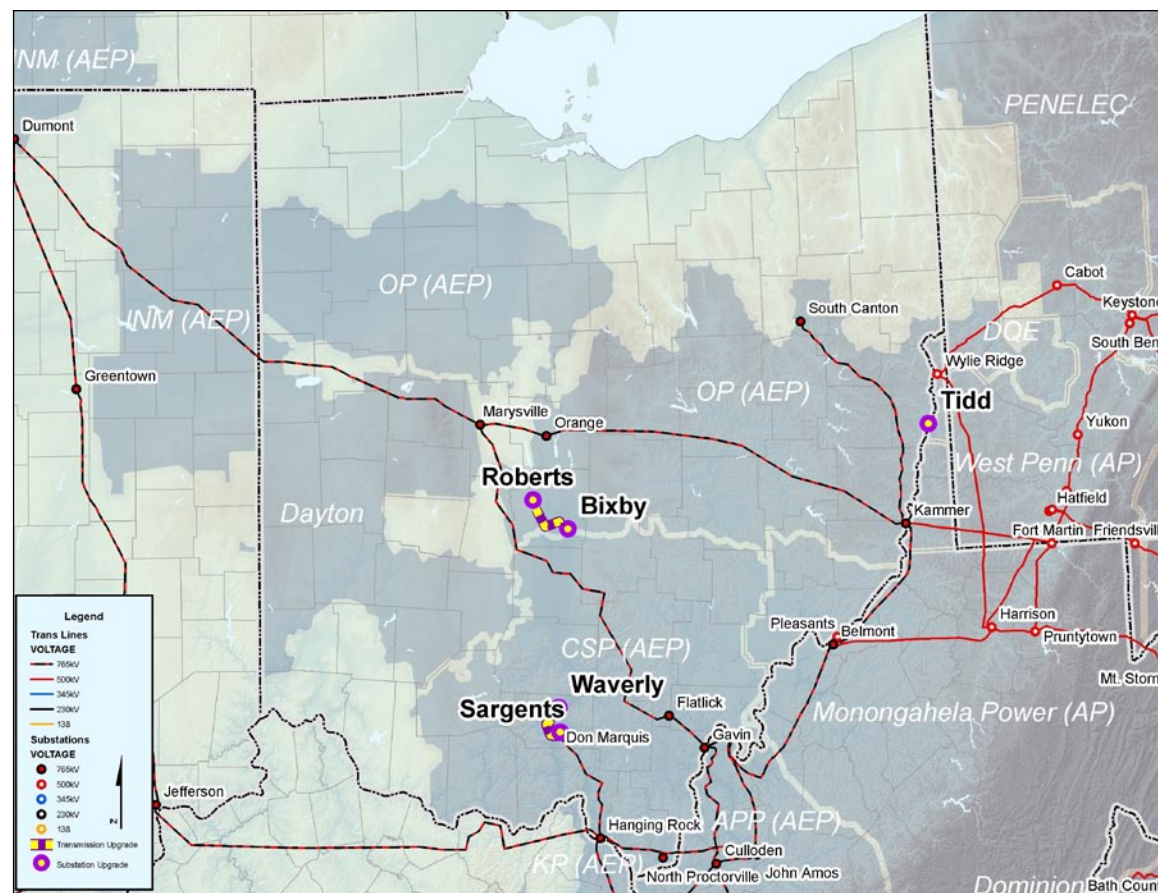


Table 4.9.3-1: Major PJM Transmission Upgrades in Ohio

Map Ref.	Limiting Facility / Upgrade Description	System Upgrade Drivers								Date / Status	Cost	TO Zones	States
		Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TOI Upgrade	Transmission Service				
1	<b>Tidd 345 kV Circuit Breakers</b>											AEP, Buckeye Power	OH
	Replacement of AA and AA1 breakers at Tidd 345 kV substation	X								November 2004	\$ 1.3 M	AEP	OH
	Replace breakers FF1 and FF2 at Tidd 345 kV Station	X								April 2006	\$ 1.3 M	Buckeye Power	OH
2	<b>Roberts-Bixby 138 kV Circuit</b>											AEP	OH
	Install new 345/138 kV transformer at Roberts Station; Reconductor Bixby-LSII 138 kV line; Upgrade 138 kV breakers at Bixby Substation	X								May 2006	\$ 14.2 M	AEP	OH
3	<b>Waverly-Sargents 138 kV Circuit</b>											AEP	OH
	Install new 345/138 kV transformer and reconfigure 138 kV system in Waverly-Sargents 138 kV area	X								June 2007	\$ 26.5 M	AEP	OH
4	<b>New 138 kV Switching Station</b>											AEP	OH
	New 138 kV Switching Station for project L01_AEP137					X					\$ 2.44 M	AEP	OH
5	<b>Bellefonte-North Proctorville 138 kV loop</b>											AEP	OH
	Construct approximately 0.9 miles of double-circuit 138 kV line to loop the Bellefonte-North Proctorville 138 kV circuit into the New 138 kV Switching Station for L01_AEP137					X					\$ 1.22 M	AEP	OH

Table 4.9.3-1: Major PJM Transmission Upgrades in Ohio, Continued

		System Upgrade Drivers											
		Baseline Upgrades				Network Upgrades		TOI Upgrade	Transmission Service				
Map Ref.	Limiting Facility / Upgrade Description	Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TO – Local Issue	Long-term Firm Transmission Service	Date / Status	Cost	TO Zones	States
6	N. Haverhill-Ginat Creek and Ginat Creek-Franklin Furnace 138 kV											AEP	OH
	Reconductor N. Haverhill-Ginat Creek and Ginat Creek-Franklin Furnace portions of the N. Haverhill-Millbrook Park-Argentum 69 kV circuit; Replace 65 or 87 poles					X					\$1.14	AEP	OH
7	Hyatt Station and Trent 138 kV Station											AEP	OH
	Install 5% series reactor at Hyatt Station and install 29 MVAR capacitor at Trent 138 kV Station	X								June 2005	\$ 0.9 M	AEP	OH
8	North Proctorville 138 kV Station											AEP	OH
	Upgrade the primary and back-up carrier relaying facilities at North Proctorville 138 kV Station					X					\$ 0.38 M	AEP	OH
9	West Canton-Dale 138 kV											AEP	OH
	Upgrade West Canton 138 kV bus and 1 mile of West Canton-Dale 138 kV line	X								June 2009	\$0.15	AEP	OH
10	South Canton 765/345 kV											AEP	OH
	Replace South Canton 765/345 kV transformer with three 750 MVA single-phase units							X		July 2005		AEP	OH





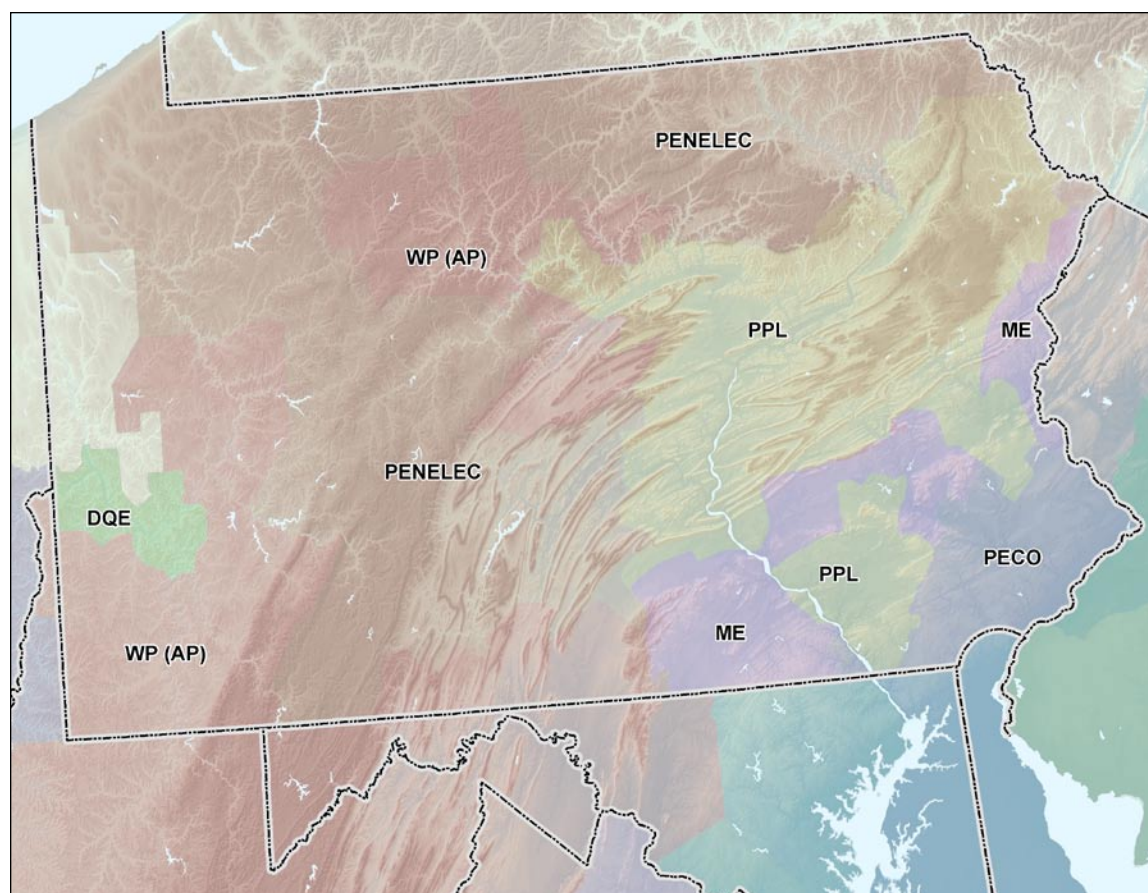
## Section 4.10: Pennsylvania RTEP Overview

### 4.10.1 – Load and Generation

PJM operates the transmission system for the following TOs in Pennsylvania: the West Penn (WP) sub-zone of Allegheny Power (AP), Duquesne Light Company (DLCO), Metropolitan Edison Company (ME), PECO Energy Company (PECO), Pennsylvania Electric Company (PENELEC) and PPL Electric Utilities Corporation (PPL) as shown in **Map 4.10.1-1**.

The transmission system in Pennsylvania provides electric delivery service to customers in the state and transmits energy west to east to major load centers in eastern and southwestern PJM. The state's electrical topography is shown in **Map 4.10.1-2**.

**Map 4.10.1-1: PJM Transmission Owner Zones in Pennsylvania**



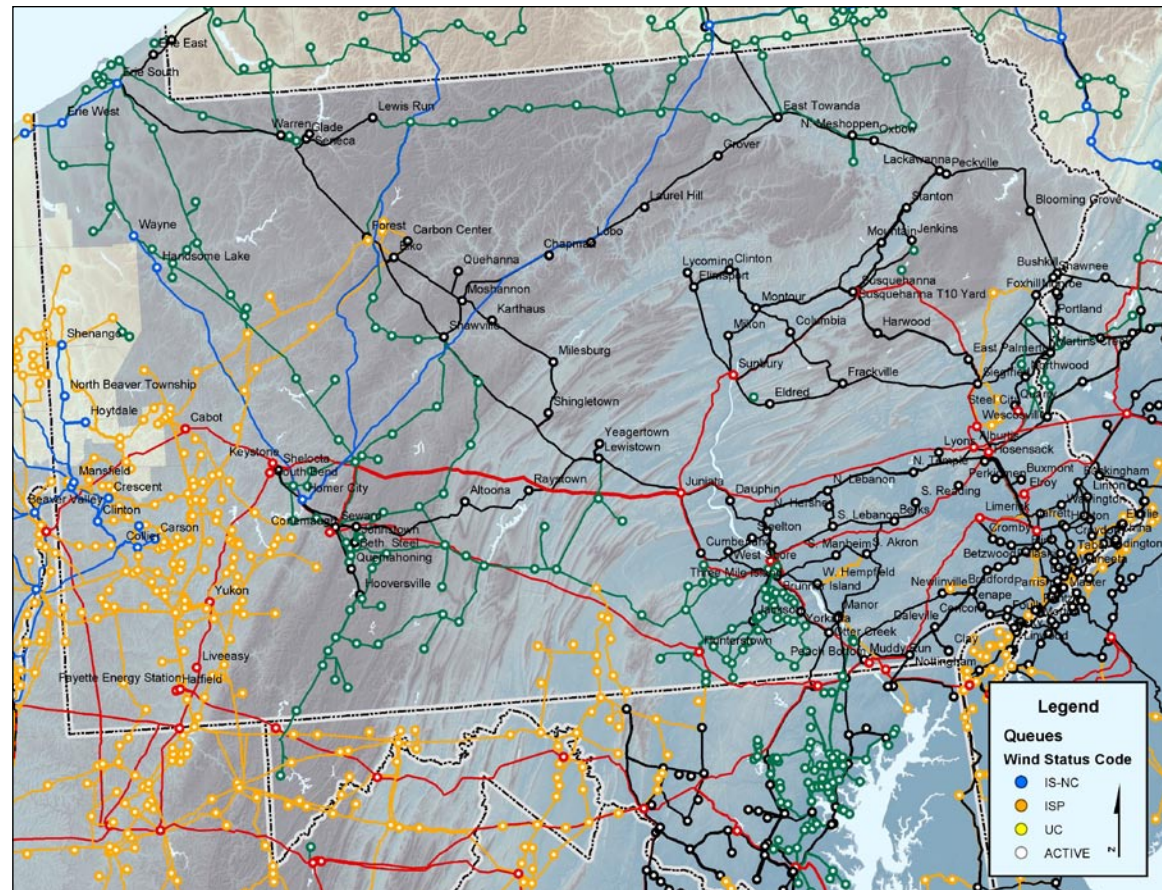
### Load Growth

The forecasted 2005 summer peak load served in Pennsylvania was 27,238 MW and is forecasted to grow at an annual rate of 1.9% over the next 10 year period, reaching approximately 32,027 MW by the summer of 2015.

The winter peak load served in Pennsylvania was 24,447 MW and is forecasted to grow at an annual rate of 1.2% over the next 10 year period, reaching approximately 27,538 MW by the winter of 2014-15.

The forecast loads cited above were modeled in the power flow studies used to develop PJM's RTEP through December 2005.

Map 4.10.1-2: PJM Transmission System in Pennsylvania



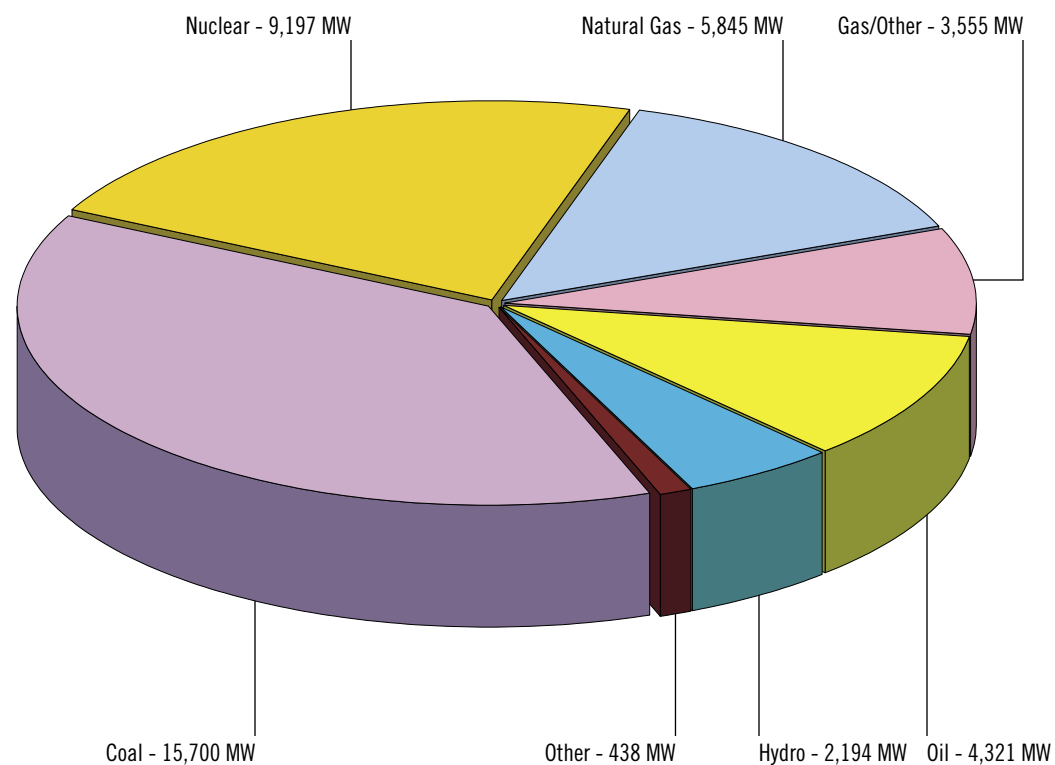
<b>IS-NC</b>	In Service, No Capacity Requested
<b>ISP</b>	Partially In Service
<b>UC</b>	Under Construction
<b>Active</b>	In PJM Process

The existing transmission system in Pennsylvania is currently planned to be reinforced to meet expected 2009 peak load conditions. Beyond 2009, additional transmission system expansion is expected to be needed to meet expected peak load requirements.

**Existing Generating Capacity in Pennsylvania**

Figure 4.10.1-1 provides a snapshot of the existing installed capacity by fuel type in the area of Pennsylvania served by PJM.

**Figure 4.10.1-1: Existing Installed Capacity by Fuel Type, in Pennsylvania**



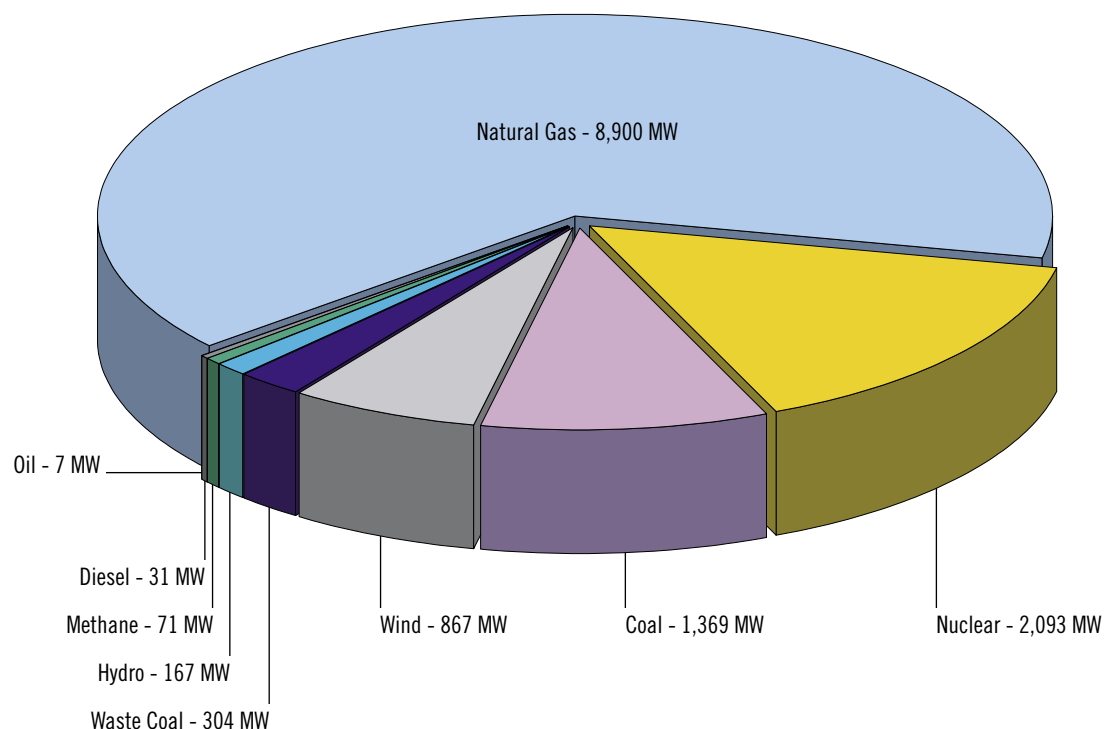
#### 4.10.2 – Generator Interconnection Requests

PJM has received interconnection requests for numerous new generation facilities proposed for installation in Pennsylvania since 1999.

Status	# of Projects	MW
In-Service	70	11687
Under Construction	7	1041
Active (Under Study)	51	4190
Withdrawn	164	55493
TOTAL	292	72411

**Figure 4.10.2-1** shows the capacity rights requested by fuel type for those generator interconnection requests in Queue A through N that are in-service, under construction or active in PJM's interconnection process. Only transmission enhancements associated with generator interconnection requests in Queue A through Queue N are included in the current RTEP. Interconnection requests in Queue O and Queue P are presently in the Feasibility Study or System Impact Study phase of interconnection analysis.

**Figure 4.10.2-1: Capacity Rights by Fuel Type for Queued Generator Interconnection Requests in Pennsylvania**



**Table 4.10.2-1** includes queued generating resource interconnection requests in Queue A through Queue P that are under construction or active in PJM's RTEP interconnection process. A status code of "IS-NC" or "ISP" denotes a generating resource that is in-service but has not achieved full capacity status. Resources fully in-service (designated "IS") are included in the summary tabulation on the previous page, but are not separately enumerated in **Table 4.10.2-1**. **Map 4.10.2-1** shows the location of each queued request in the Table.

**Table 4.10.2-1: Queued Generation Interconnection Requests in Pennsylvania**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
A54	TMI 230 kV	45	45	IS-NC	6/1/02	METED	Nuclear
B34	Seward 230 kV	304	304	ISP	11/23/06	PENELEC	Waste Coal
C02	South Lebanon 230 kV	47	47	ACTIVE	1/1/07	METED	Natural Gas
D01	Engleside 69 kV	1.6	1.6	IS-NC	5/31/00	PPL	Natural Gas
G04	Brunner Island #2	14	14	IS-NC	1/1/02	PPL	Coal
G05	Brunner Island #1	14	14	IS-NC	5/1/04	PPL	Coal
G06	Martins Creek #4	30	30	ACTIVE	12/1/07	PPL	Coal
G22	North Wales 34.5 kV	38	38	IS-NC	9/30/02	PECO	Natural Gas
G30_W53	South Bend 500 kV	104	104	ISP	6/1/03	AP	Natural Gas
G46	Peach Bottom 500 kV	70	70	ISP	10/1/07	PECO	Nuclear
G51_W60	Hatfield Ferry 500 kV	525	525	UC	8/1/08	AP	Coal
H02	Susquehanna 230 kV	9	9	IS-NC	12/1/04	PPL	Nuclear
H06	Chichester 230 kV	25	25	IS-NC	12/31/04	PECO	Natural Gas
I13	Hooversville 115 kV	30		ACTIVE	7/1/06	PENELEC	Wind
J09	Harrisburg Authority	22	22	UC	5/1/06	PPL	Methane
K02	East Towanda-Moshannon 230 kV	70	0	UC	10/1/06	PENELEC	Wind
K13	Hooversville 115 kV	6.8	6.8	ACTIVE	9/30/06	PENELEC	Wind
K18	Arnold 115 kV	2.08	2.08	IS-NC	1/1/99	PENELEC	Wind
K20	Mill Run 25 kV	3	3	IS-NC	4/1/02	AP	Wind
K21	East Carbondale 69 kV	70	13	IS-NC	7/1/04	PPL	Wind
K22	Somerset 22.86 kV	9	1.8	IS-NC	1/1/99	PENELEC	Wind
K23	Meyersdale North	48	6	IS-NC	7/1/04	PENELEC	Wind
L03	Morgantown	0.8		UC	5/31/06	PPL	Methane
L13	Rockwood	40	8	ACTIVE	12/31/07	PENELEC	Wind
L18	Bear Creek	26	5.2	UC	1/31/06	PPL	Wind
L19	Karthus 230 kV	290	290	UC	6/30/08	AP	Coal
M07	Peckville (Archbald)	6.3	6.3	IS-NC	3/15/04	PPL	Natural Gas
M11	Susquehanna #1	111	111	ACTIVE	3/1/08	PPL	Nuclear
M12	Susquehanna #2	107	107	UC	3/1/08	PPL	Nuclear
M20	Chestnut Valley 25 kV	5	5	ACTIVE	5/30/06	AP	Methane
M22	Cambria Slope 115 kV	125	125	ACTIVE	2/1/07	PENELEC	Coal
M26	Champion	272	300	ACTIVE	5/31/08	AP	Coal
N14	Frackville-Hauto #3 69 kV	24	4.8	ACTIVE	6/1/06	PPL	Wind
N26	Daleville	1.6	1.6	ACTIVE	3/31/06	PECO	Methane
N30	Grand Point 12 kV	5		ACTIVE	12/31/06	AP	Methane
N31	Freemansburg 69 kV	5		ACTIVE	12/1/07	PPL	Methane
N32	Gans 138 kV	60	12	ACTIVE	12/1/06	AP	Wind
N36	Gold-Sabinsville 115 kV	50	10	ACTIVE	11/1/06	PENELEC	Wind

**Table 4.10.2-1: Queued Generation Interconnection Requests in Pennsylvania, Continued**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
N39	Johnstown-Altoona 230 kV	80	16	ACTIVE	11/1/06	PENELEC	Wind
N50	Eldred 230 kV	90	18	ACTIVE	11/1/06	PPL	Wind
N51	Harwood 230 kV	100.5	20	ACTIVE	11/1/06	PPL	Wind
002	Glendon 34.5 kV	3.2	3.2	ACTIVE	12/31/05	PPL	Methane
017	Somerset-Allegheny 115 kV	65	13	ACTIVE	7/1/06	PENELEC	Wind
018	Salix-Claysburg (Krayn) 115 kV	85	13	ACTIVE	1/9/07	PENELEC	Wind
019	Somerset 115 kV	33	6.6	ACTIVE	12/16/06	PENELEC	Wind
026	Pine Grove 69 kV	8	8	ACTIVE	2/6/06	PPL	Diesel
028	Jenkins-Harwood #2 69 kV	85	17	ACTIVE	9/30/06	PPL	Wind
036	Honey Brook 12 kV	1.6		ACTIVE	12/1/06	PPL	Methane
038	Johnstown-Altoona 230 kV	50	10	ACTIVE	12/15/06	PENELEC	Wind
039	Sunbury - Dauphin 69 kV	56	11.2	ACTIVE	12/15/07	PPL	Wind
040	Pine Grove - Frailey 69 kV	44	8.8	ACTIVE	12/15/07	PPL	Wind
046	Frackville-Hauto #3 69 kV	2	0.4	ACTIVE	12/1/07	PPL	Wind
048	Hays Mill 23 kV	36	7.2	ACTIVE	12/31/06	PENELEC	Wind
052	Gold-Potter Co 115 kV	100	20	ACTIVE	11/1/07	PENELEC	Wind
053	Beaver Valley #1	81	81	ACTIVE	9/15/06	DQE	Nuclear
054	Beaver Valley #2	77	77	ACTIVE	10/23/06	DQE	Nuclear
055	Peckville 69 kV	9	9	ACTIVE	1/1/07	PPL	Methane
056	Osterburg East 115 kV	125	25	ACTIVE	12/31/07	PENELEC	Wind
059	Gold 115 kV	99	19.8	ACTIVE	12/31/07	PENELEC	Wind
060	Berlin 23 kV	5.4	1.08	ACTIVE	7/15/06	PENELEC	Wind
070	Susquehanna - Harwood 230 kV	124	24.8	ACTIVE	12/15/07	PPL	Wind
071	Hooversville 115 kV	60	12	ACTIVE	11/30/07	PENELEC	Wind
072	Hooversville-Central City	60	12	ACTIVE	11/30/07	PENELEC	Wind
P01	Westover-Madera 115 kV	100	20	ACTIVE	10/31/07	PENELEC	Wind
P03	Frackville-Hauto #3	1.3	0.26	ACTIVE	12/31/07	PPL	Wind
P04	Peach Bottom 500 kV	550	550	ACTIVE	6/1/08	PECO	Natural Gas
P05	Graceton 230 kV	550	550	ACTIVE	6/1/08	PECO	Natural Gas
P22	Johnstown Altoona 230 kV	50	10	ACTIVE	7/15/07	PENELEC	Wind
P28	Mehoopany 115 kV	150	30	ACTIVE	11/1/07	PENELEC	Wind
P34	Washington Landfill	6.4	6.4	ACTIVE	12/31/06	AP	BioMass
P45A	E. Carbondale - Lackawanna 69 kV	120	24	ACTIVE	12/1/09	PPL	Wind
P47	Mansfield - S. Troy 115 kV	100	20	ACTIVE	12/31/07	PENELEC	Wind
P48	Bedford North - Allegheny 115 kV	120	24	ACTIVE	12/15/07	PENELEC	Wind
P60	New Baltimore	150	150	ACTIVE	9/1/07	PENELEC	Wind



### 4.10.3 – Transmission Expansion Plans

**Table 4.10.3-1** and **Map 4.10.3-1** summarize the planned transmission upgrades presently in PJM's RTEP for Pennsylvania. As the Table notes, drivers of such upgrades include baseline reliability, generation interconnection requests and TOIs local reliability issues.

**Map 4.10.3-1: Major Transmission System Upgrades in Pennsylvania**

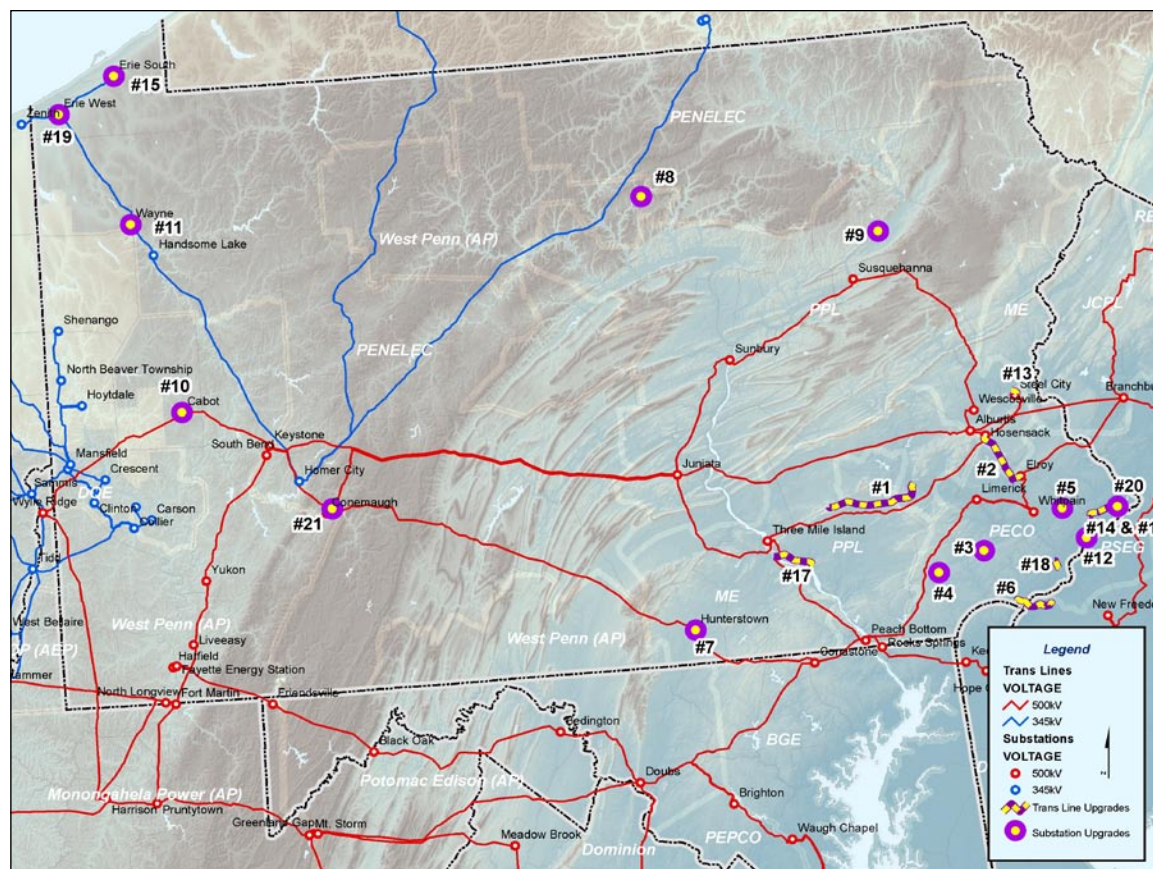


Table 4.10.3-1: Major Transmission System Upgrades in Pennsylvania

		System Upgrade Drivers											
		Baseline Upgrades				Network Upgrades		TOI Upgrade	Transmission Service				
Map Ref.	Limiting Facility / Upgrade Description	Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TO – Local Issue	Long-term Firm Transmission Service	Date / Status	Cost	TO Zones	States
1	S Akron - Berks and S Lebanon - S Reading Circuits											METED, PPL	PA
	Rebuild 12 miles of S Akron-Berks to double circuit, looping METED's S Lebanon-S Reading line into Berks; replace of S. Reading 230 kV breaker 107252.	X								June 2008	\$ 42 M	PPL	PA
2	Elroy - Hosensack 500 kV Circuit											PECO	PA
	Replace two 500 kV circuit breakers and two wave traps at Elroy substation to increase rating of Elroy - Hosensack 500 kV	X								June 2008	\$ 2.2 M	PECO	PA
3	Planebrook 230 kV Substation											PECO	PA
	Install 161Mvar capacitor at Planebrook 230 kV substation	X								June 2007	\$ 2 M	PECO	PA
4	Newlinville 230 kV Substation											PECO	PA
	Install 161Mvar capacitor at Newlinville 230 kV substation	X								June 2008	\$ 2 M	PECO	PA
5	Heaton 230 kV Substation											PECO	PA
	Install 161Mvar capacitor Heaton 230 kV substation	X								June 2008	\$ 2 M	PECO	PA
6	Chichester - Mickleton 230 kV Circuit											PECO	PA
	Install 2% series reactor at Chichester substation on the Chichester - Mickleton 230 kV circuit	X								June 2008	\$ 3 M	PECO	PA
7	Hunterstown 230 kV Substation											METED	PA
	Install 230 kV series reactor and 2- 100MVAR PLC switched capacitors at Hunterstown	X								June 2008	\$ 13 M	METED	PA

Table 4.10.3-1: Major Transmission System Upgrades in Pennsylvania, Continued

Map Ref.	Limiting Facility / Upgrade Description	System Upgrade Drivers								Date / Status	Cost	TO Zones	States
		Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TOI Upgrade	Transmission Service				
8	<b>Laurel Hill 230 kV Substation</b>											PENELEC	PA
	New 230 kV Laurel Hill substation for K02					X				July 2006	\$ 1.8 M	PENELEC	PA
9	<b>Mountain 230/69 kV Transformer</b>											UGI	PA
	230/69 kV Transformer at Mountain substation							X		February 2006	\$ 4.3 M	UGI	PA
10	<b>Cabot 138 kV Substation</b>											AP	PA
	Install a 132 MVAR 138 kV capacitor with 138 kV Breaker at Cabot substation							X		May 2006	\$ 1.112 M	AP	PA
11	<b>Wayne 345/115 kV Transformer</b>											PENELEC	PA
	Replace 345/115 kV transformer at Wayne substation							X		January 2006	\$ 1.5 M	PENELEC	PA
12	<b>Holmsburg 230/138 kV Transformer</b>											PECO	PA
	Replace 230/138 kV transformer at Holmsburg; Richmond - Holmsburg Tp conversion project; and add Rich					X				June 2004	\$ 17.1 M	PECO	PA
13	<b>Steel City - Quarry 230 kV Circuit</b>											PPL	PA
	Build second Steel City - Quarry 230 kV circuit					X				August 2003	\$ 6.5 M	PPL	PA
14	<b>Emilie - Neshaminy 138 kV Circuit</b>											PECO	PA
	Rebuild Emilie - Neshaminy 138 kV (2x795kcmil)					X				April 2004	\$ 6.057 M	PECO	PA

Table 4.10.3-1: Major Transmission System Upgrades in Pennsylvania, Continued

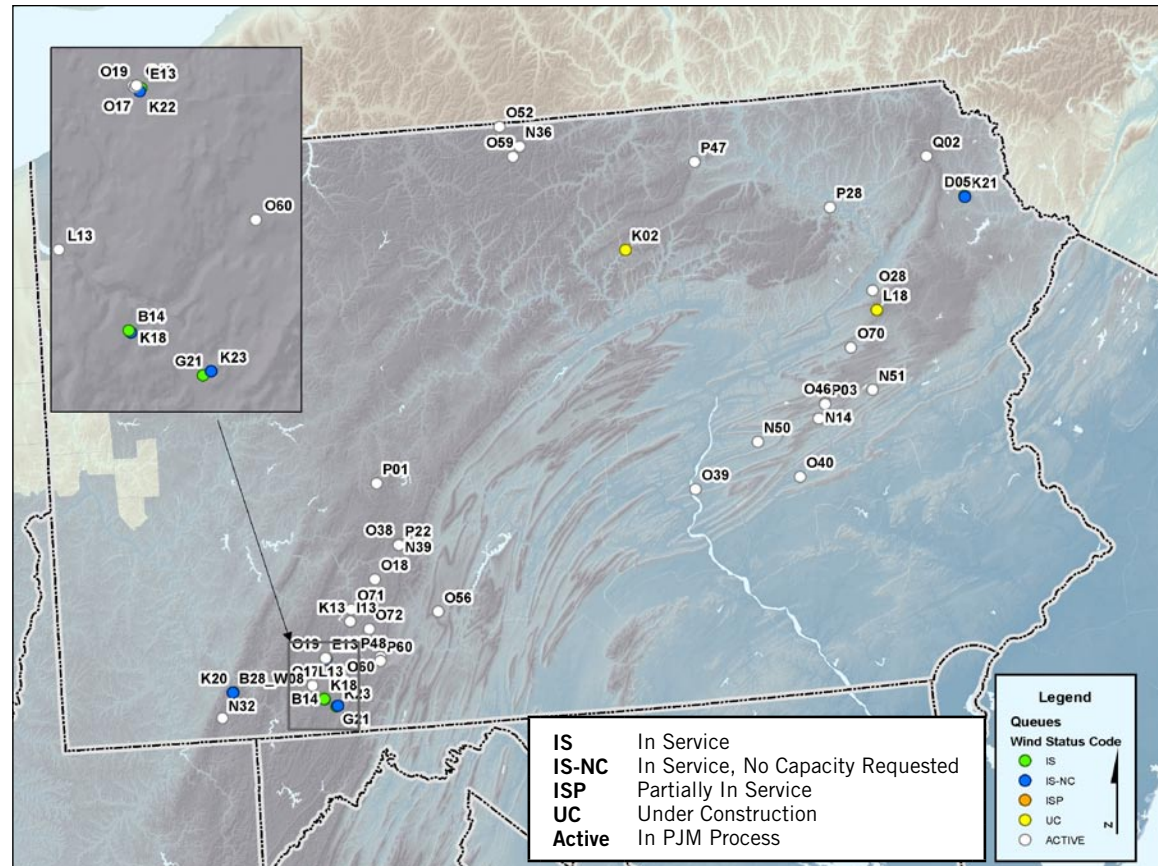
Map Ref.	Limiting Facility / Upgrade Description	System Upgrade Drivers								Date / Status	Cost	TO Zones	States
		Baseline Load Growth/ Deliverability & Reliability	Baseline Upgrades	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Network Upgrades	TOI Upgrade	Transmission Service				
15	<b>Erie South 345/230 kV Transformer</b>											PENELEC	PA
	Install second Erie South 345/230 kV transformer	X								June 2003	\$ 5.6 M	PENELEC	PA
16	<b>Neshaminy - Byberry 138 kV Circuit</b>											PECO	PA
	Rebuild Neshaminy - Byberry 138 kV (2x795kcmil)						X			April 2004	\$ 5.387 M	PECO	PA
17	<b>Reactor at Brunner - West Hempfield 230 kV</b>											PPL	PA
	Install a temporary series reactor on Brunner - West Hempfield 230 kV, Replace one South Manheim 230						X			To be announced	\$ 4.5 M	PPL	PA
18	<b>Graysferry - Parrish 230 kV</b>											PECO	PA
	Reconductor Graysferry - Parrish 230 kV						X			To be announced	\$ 4.08 M	PECO	PA
19	<b>Erie West 345/230 kV Transformer</b>											PENELEC	PA
	Install second Erie West 345/115 kV transformer	X								June 2003	\$ 4 M	PENELEC	PA
20	<b>Emilie 230/138 kV Transformer</b>											PECO	PA
	Add second Emilie 230/138 kV transformer						X			April 2004	\$ 3.902 M	PECO	PA
21	<b>Seward 230/115 kV Transformer</b>											PENELEC	PA
	Install a second Seward 230/115 kV transformer						X			September 2003	\$ 3.72 M	PENELEC	PA

#### 4.10.4 – Other Related RTEP Initiatives

##### **Wind-powered Generation Projects**

Wind-powered generating facility projects generally develop in those geographic areas with favorable wind frequency, speed and duration characteristics. The mountainous areas of West-central Pennsylvania along the ridges of the Allegheny Mountains and along the ridges of the Appalachian Mountain range in northeast Pennsylvania have been identified by developers as favorable for wind project development, as shown in **Map 4.10.4-1** and summarized in **Table 4.10.4-1**. Please see **Section 3.5** for additional details on wind-powered generation projects throughout PJM.

**Map 4.10.4-1: Queued Wind-powered Generation Projects in Pennsylvania**



**Table 4.10.4-1: Queued Wind-Powered Generation Projects in Pennsylvania**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
B14	Arnold 115 kV	15		IS	1/1/99	PENELEC	Wind
B28_W08	Mill Run 25 kV	15		IS	4/1/02	AP	Wind
D05	East Carbondale 69 kV	70		IS	12/1/03	PPL	Wind
E13	Somerset 22.86 kV	10		IS	1/1/99	PENELEC	Wind
G21	Myersdale North	48		IS	12/3/03	PENELEC	Wind
I13	Hooversville 115 kV	30		ACTIVE	7/1/06	PENELEC	Wind
K02	East Towanda-Moshannon 230 kV	70	0	UC	10/1/06	PENELEC	Wind
K13	Hooversville 115 kV*	6.8	6.8	ACTIVE	12/31/05	PENELEC	Wind
K18	Arnold 115 kV	2.08	2.08	IS-NC	1/1/99	PENELEC	Wind
K20	Mill Run 25 kV*	3	3	IS-NC	4/1/02	AP	Wind
K21	East Carbondale 69 kV	70	13	IS-NC	7/1/04	PPL	Wind
K22	Somerset 22.86 kV*	9	1.8	IS-NC	1/1/99	PENELEC	Wind
K23	Meyersdale North*	48	6	IS-NC	7/1/04	PENELEC	Wind
L13	Rockwood	40	8	ACTIVE	12/31/07	PENELEC	Wind
L18	Bear Creek	26	5.2	UC	1/31/06	PPL	Wind
N14	Frackville-Hauto #3 69 kV	24	4.8	ACTIVE	6/1/06	PPL	Wind
N32	Gans 138 kV	60	12	ACTIVE	12/1/06	AP	Wind
N36	Gold-Sabinsville 115 kV	50	10	ACTIVE	11/1/06	PENELEC	Wind
N39	Johnstown-Altoona 230 kV	80	16	ACTIVE	11/1/06	PENELEC	Wind
N50	Eldred 230 kV	90	18	ACTIVE	11/1/06	PPL	Wind
N51	Harwood 230 kV	100.5	20	ACTIVE	11/1/06	PPL	Wind
O17	Somerset-Allegheny 115 kV	65	13	ACTIVE	7/1/06	PENELEC	Wind
O18	Salix-Claysburg (Krayn) 115 kV	85	13	ACTIVE	1/9/07	PENELEC	Wind

\* Interconnection requests by developers seeking capacity credits for projects submitted under earlier queue positions for energy-only.

**Table 4.10.4-1: Queued Wind-Powered Generation Projects in Pennsylvania, Continued**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
O19	Somerset 115 kV	33	6.6	ACTIVE	12/16/06	PENELEC	Wind
O28	Jenkins-Harwood #2 69 kV	85	17	ACTIVE	9/30/06	PPL	Wind
O38	Johnstown-Altoona 230 kV	50	10	ACTIVE	12/15/06	PENELEC	Wind
O39	Sunbury - Dauphin 69 kV	56	11.2	ACTIVE	12/15/07	PPL	Wind
O40	Pine Grove - Frailey 69 kV	44	8.8	ACTIVE	12/15/07	PPL	Wind
O46	Frackville-Hauto #3 69 kV	2	0.4	ACTIVE	12/1/07	PPL	Wind
O48	Hays Mill 23 kV	36	7.2	ACTIVE	12/31/06	PENELEC	Wind
O52	Gold-Potter Co 115 kV	100	20	ACTIVE	11/1/07	PENELEC	Wind
O56	Osterburg East 115 kV	125	25	ACTIVE	12/31/07	PENELEC	Wind
O59	Gold 115 kV	99	19.8	ACTIVE	12/31/07	PENELEC	Wind
O60	Berlin 23 kV	5.4	1.08	ACTIVE	7/15/06	PENELEC	Wind
O70	Susquehanna - Harwood 230 kV	124	24.8	ACTIVE	12/15/07	PPL	Wind
O71	Hooversville 115 kV	60	12	ACTIVE	11/30/07	PENELEC	Wind
O72	Hooversville-Central City	60	12	ACTIVE	11/30/07	PENELEC	Wind
P01	Westover-Madera 115 kV	100	20	ACTIVE	10/31/07	PENELEC	Wind
P03	Frackville-Hauto #3	1.3	0.26	ACTIVE	12/31/07	PPL	Wind
P22	Johnstown Altoona 230 kV	50	10	ACTIVE	7/15/07	PENELEC	Wind
P28	Mehoopany 115 kV	150	30	ACTIVE	11/1/07	PENELEC	Wind
P45A	E. Carbondale - Lackawanna 69 kV	120	24	ACTIVE	12/1/09	PPL	Wind
P47	Mansfield - S. Troy 115 kV	100	20	ACTIVE	12/31/07	PENELEC	Wind
P48	Bedford North - Allegheny 115 kV	120	24	ACTIVE	12/15/07	PENELEC	Wind
P60	New Baltimore	150	150	ACTIVE	9/1/07	PENELEC	Wind

\* Interconnection requests by developers seeking capacity credits for projects submitted under earlier queue positions for energy-only.



## Section 4.11: Northeastern Tennessee RTEP Overview

### 4.11.1 – Load and Generation

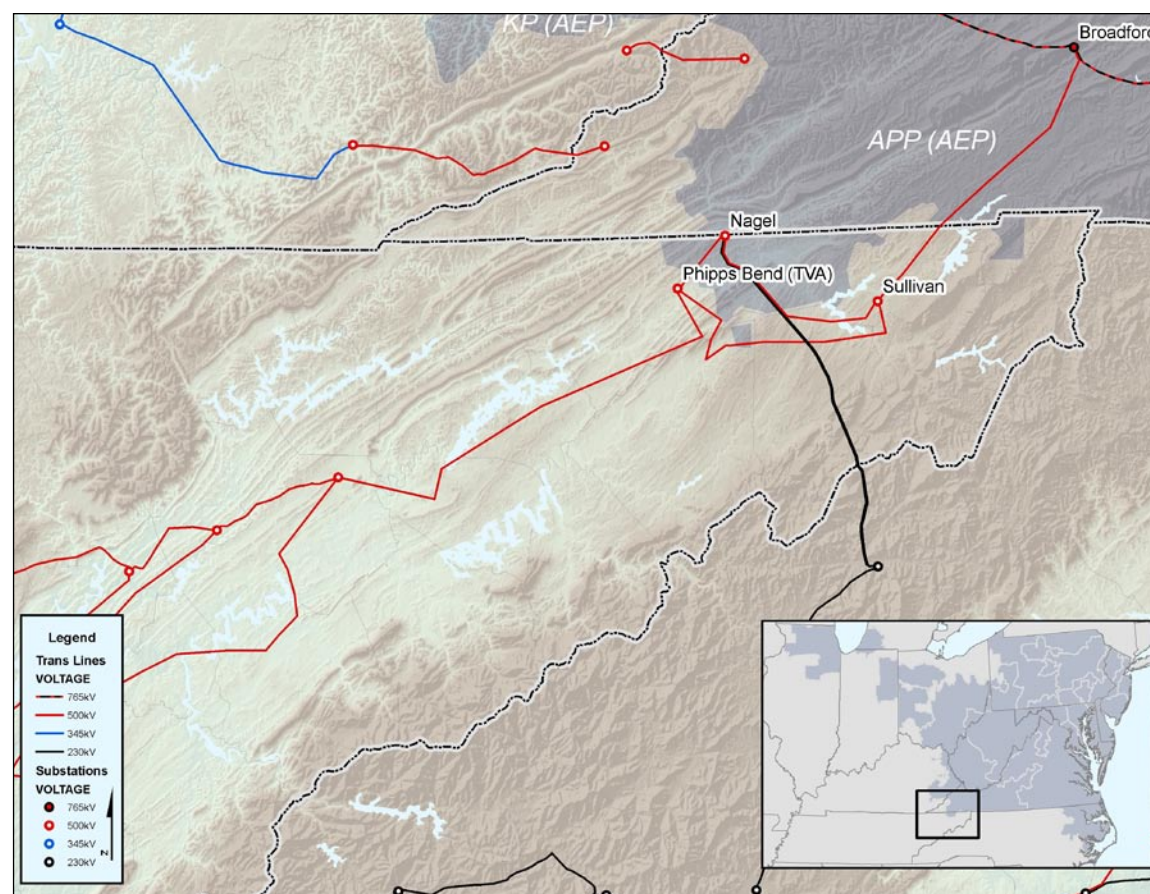
PJM operates the transmission system of the American Electric Power Company (AEP) Appalachian Power (APP) sub-zone in northeastern Tennessee, Southwestern Virginia and Southern West Virginia, as shown in **Map 4.11.1-1**.

#### Load Growth

Customer load in Northeastern Tennessee peaks during the winter. The forecasted 2004/05 winter peak load served by the AEP APP sub-zone that includes this portion of Tennessee was 7,152 MW and has been forecasted to grow at an annual rate of 1.4 percent over the next 10 year period, reaching 8,190 MW by the winter of 2014/15. The forecasted 2005 summer peak load served by the AEP APP sub-zone was 6,193 MW and has been forecasted to grow at an annual rate of 1.4 percent over the next 10 year period, reaching 7,109 MW by the summer of 2015.

The forecasted loads cited above were modeled in the power flow studies used to develop PJM's RTEP through December 2005.

**Map 4.11.1-1: Northeastern Area of Tennessee Served by PJM through the AEP APP Transmission System**



The existing transmission system in northeastern Tennessee will remain adequate to serve the forecasted peak load through 2015. Beyond 2015, transmission system expansion will likely be needed to meet expected peak load supply requirements.

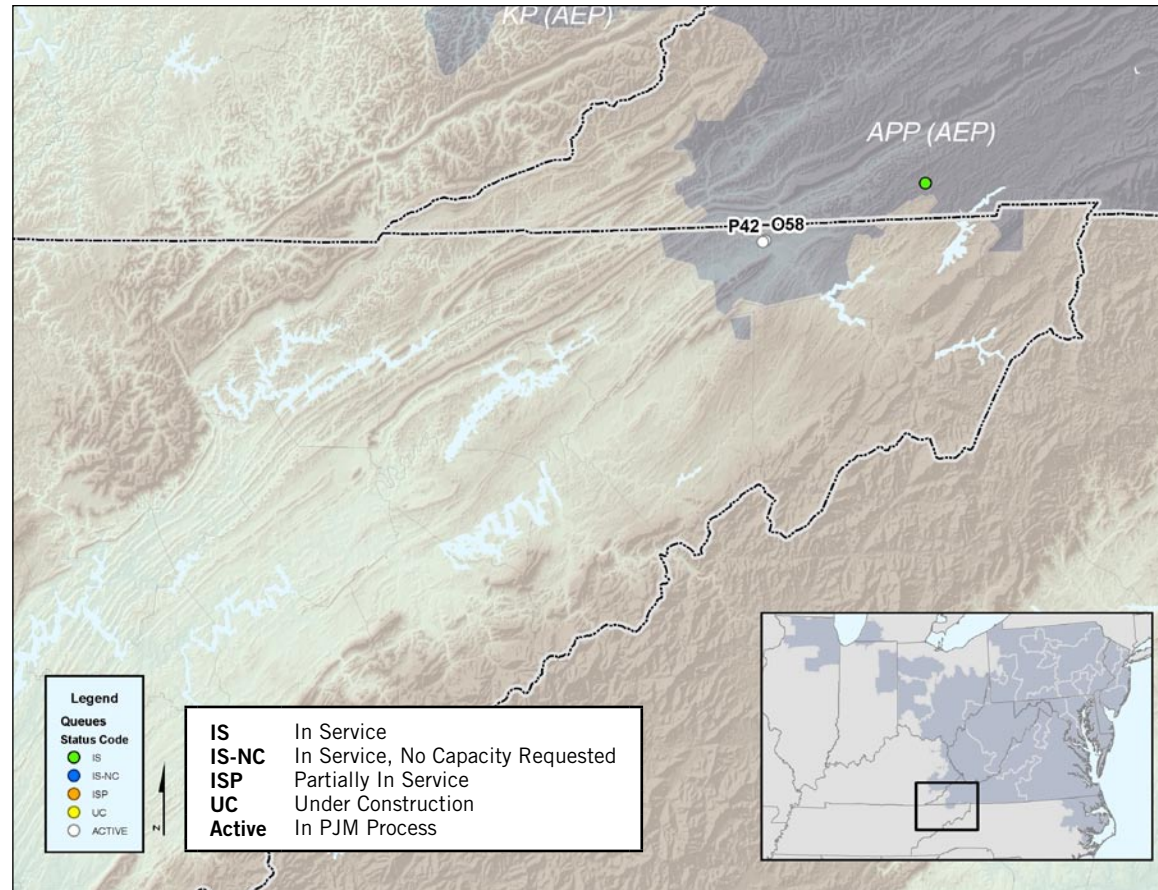
#### Existing Generating Capacity

Presently, no generating resources are located in the portion of Northeastern Tennessee served by PJM through the AEP APP sub-zone in that area.

#### 4.11.2 – Generator Interconnection Requests

PJM has received interconnection requests for one new coal-fired generation facility and one new Biomass generation facility proposed for installation in Northeastern Tennessee, as summarized in **Table 4.11.2-1** and as shown in **Map 4.11.2-1**. These two generation interconnection requests – queue positions #O58 and #P42 – are presently under study for inclusion in the next PJM RTEP. The currently approved PJM RTEP only includes expansion plans and the transmission enhancements associated with generator interconnection requests in Queue A through Queue N. Interconnection requests in Queue O and Queue P are presently in the Feasibility Study or System Impact Study phase of interconnection analysis.

**Map 4.11.2-1: Generation Interconnection Requests in PJM Queues Located in Northeastern Tennessee**



**Table 4.11.2-1: Queued Generation Interconnection Requests in Northern Tennessee**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
O58	Tenn Eastman 138 kV	75	75	ACTIVE	6/1/06	AEP	Coal
P42	West Kingsport 138 kV	50	50	ACTIVE	9/22/06	AEP	BioMass

#### 4.11.3 – Transmission Expansion Plans

No transmission upgrades are presently planned through PJM's RTEP for the AEP APP sub-zone in northeastern Tennessee.

#### 4.11.4 – Other Related RTEP Initiatives

##### ***Wind Generation Projects***

No wind-powered generating projects have been proposed for installation in northeastern Tennessee.

##### ***Generator Deactivation Requests***

PJM has not received any requests for generator deactivations in northeastern Tennessee.





## Section 4.12: Virginia RTEP Overview

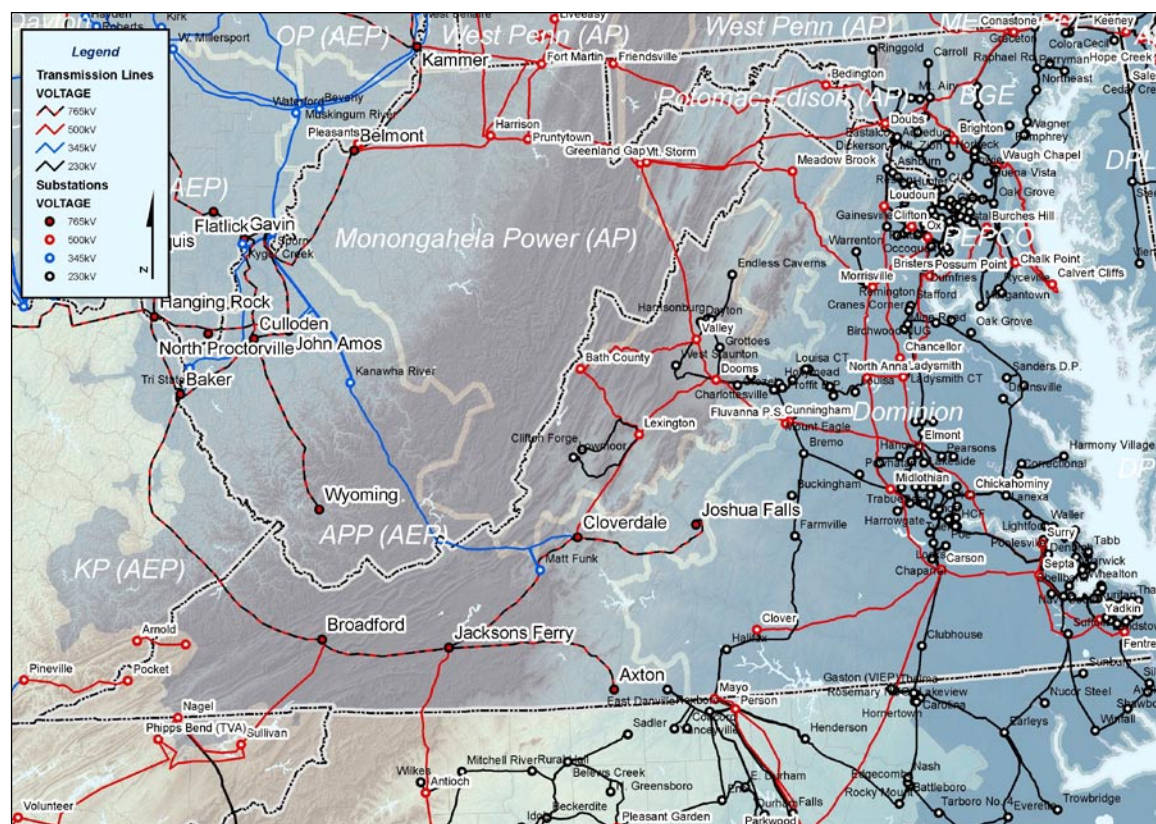
Map 4.12.1-1: Virginia Area Served by PJM

### 4.12.1 – Load and Generation

PJM operates the transmission system for several Transmission Owners in Virginia including the Potomac Edison (PED) sub-zone of Allegheny Power (AP), the Appalachian Power (APP) sub-zone of American Electric Power (AEP) and Dominion Resources as shown on **Map 4.12.1-1**. The transmission system in Virginia provides electric delivery service to customers in Virginia and also supports west to east deliveries of energy to major PJM load centers to the north and east.

#### Load Growth

The actual 2005 summer peak load served by Dominion in Virginia and the adjacent portion of Northeastern North Carolina was 18,897 MW (recorded on July 27, 2005) and is forecasted to grow at an annual rate of 1.8 percent over the next 9 year period, reaching a forecasted 20,950 MW by the summer of 2014. The 2004/05 actual winter peak load served by Dominion in Virginia and the adjacent portion of Northeastern North Carolina was approximately 16,018 MW and is forecasted to grow at an annual rate of 1.6 percent over the next 9 year period, reaching a forecasted 18,467 MW by the winter of 2013-14.



#### NOTE

The 2005 PJM Load Forecast Report was issued on February 11, 2005, prior to Dominion's integration into PJM. Thus, the actual and forecast load values shown above do not include the load served by Dominion in PJM during the 2005 summer period. The actual PJM 2005 summer peak load with Dominion included was about 135,000 MW and occurred on July 26, 2005. Full PJM load forecasts for the entire PJM footprint that includes Dominion will be provided with future updates to this report.

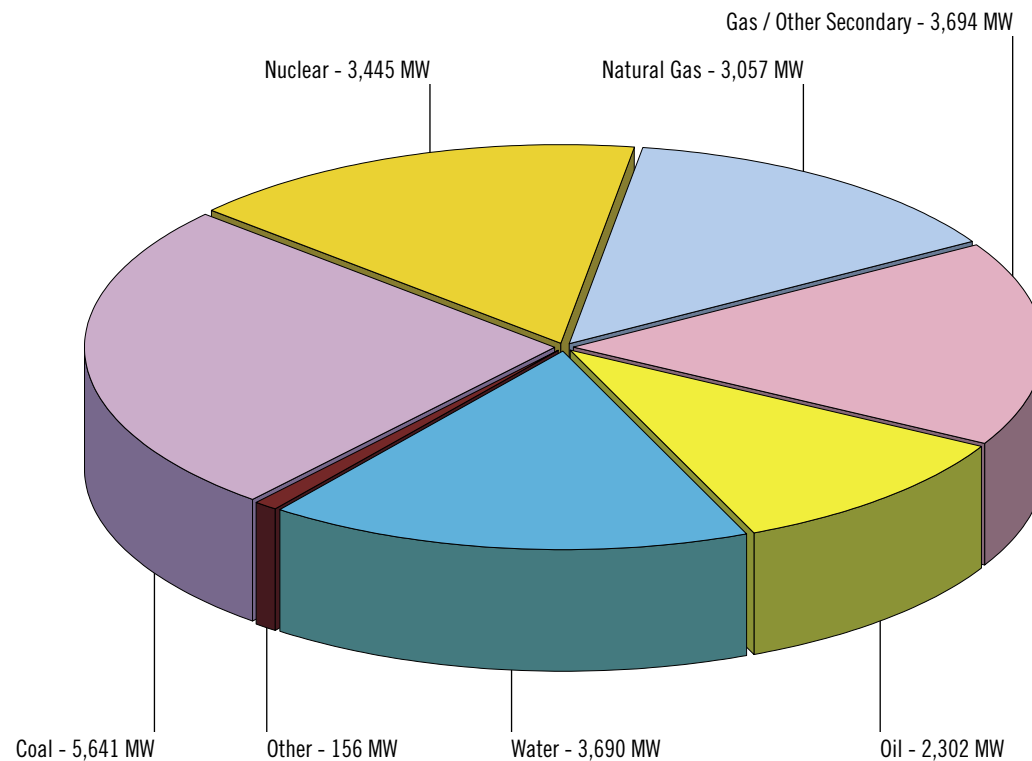
The load served by the Potomac Edison (PED) sub-zone of Allegheny Power (AP) in northern Virginia and western Maryland is included in the **Section 4.5** discussion for Maryland and D.C. The load served by the Appalachian Power (APP) sub-zone of American Electric Power (AEP) in the southwestern portion of Virginia and in southern West Virginia is included in the **Section 4.13** discussion for West Virginia. The forecasted loads cited above were modeled in the power flow studies used to develop PJM's RTEP through December 2005.

PJM's RTEP includes planned transmission upgrades to meet expected 2009 peak load conditions. Beyond 2009, additional transmission system expansion will likely be needed to meet expected peak load requirements. (Please refer to **Section 4.1**, Delaware and the Delmarva Peninsula, for additional discussion regarding that portion of Virginia located on the southern part of the Delmarva Peninsula.)

#### **Existing Generating Capacity**

**Figure 4.12.1-1** provides a snapshot of the existing installed capacity by fuel type in Virginia.

**Figure 4.12.1-1: Existing Installed Capacity by Fuel Type in Virginia Area Served by PJM**



#### 4.12.2 – Generator Interconnection Requests

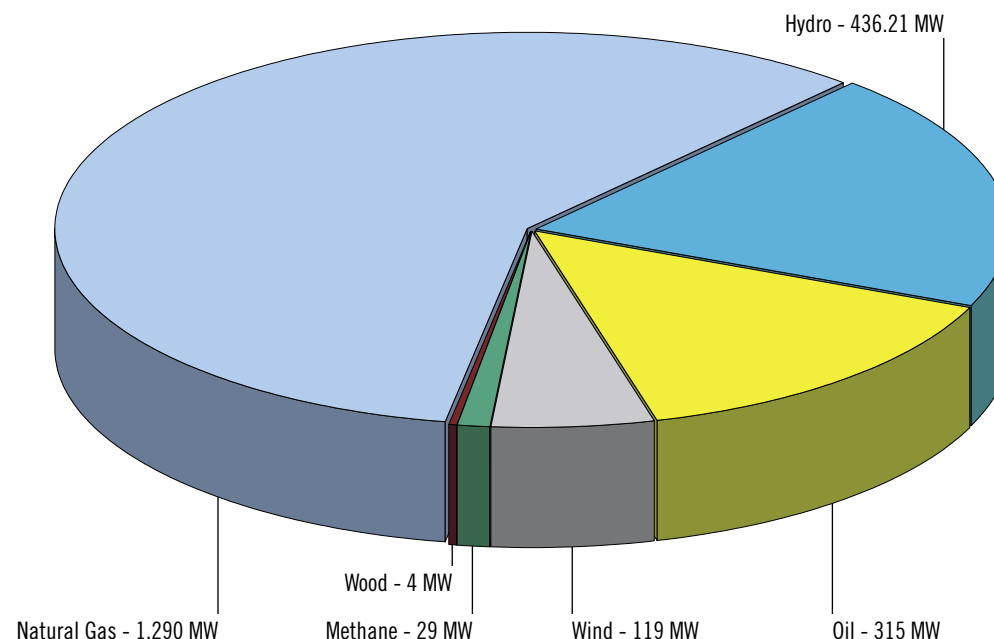
PJM presently has 20 interconnection requests for new generating resources in Virginia since Dominion joined PJM in 2005.

Status	# of Projects	MW
In-Service	2	330
Under Construction	7	1041
Active (Under Study)	11	1863
Withdrawn	8	2217
<b>TOTAL</b>	<b>28</b>	<b>4410</b>

**Table 4.12.2-1** includes queued generation requests in Queue A through Queue P that are under construction or active in PJM's interconnection process. A status code of "IS-NC" or "ISP" denotes a generating resource that is in-service but has not achieved full capacity status. Resources fully in-service (designated "IS") are included in the summary tabulation above, but are not separately enumerated in **Table 4.12.2-1**. Only transmission enhancements associated with generators in Queue A through Queue N are include in the current PJM RTEP. Interconnection requests in Queue O through Queue P are presently in the Feasibility Study or System impact Study phase on interconnection analysis.

**Figure 4.12.2-1** shows the capacity requested by fuel type for the generator interconnection requests in **Table 4.12.2-1** and those fully in-service.

**Figure 4.12.2-1: Capacity Rights by Fuel Type for Queued Generation Interconnection Requests in Virginia**

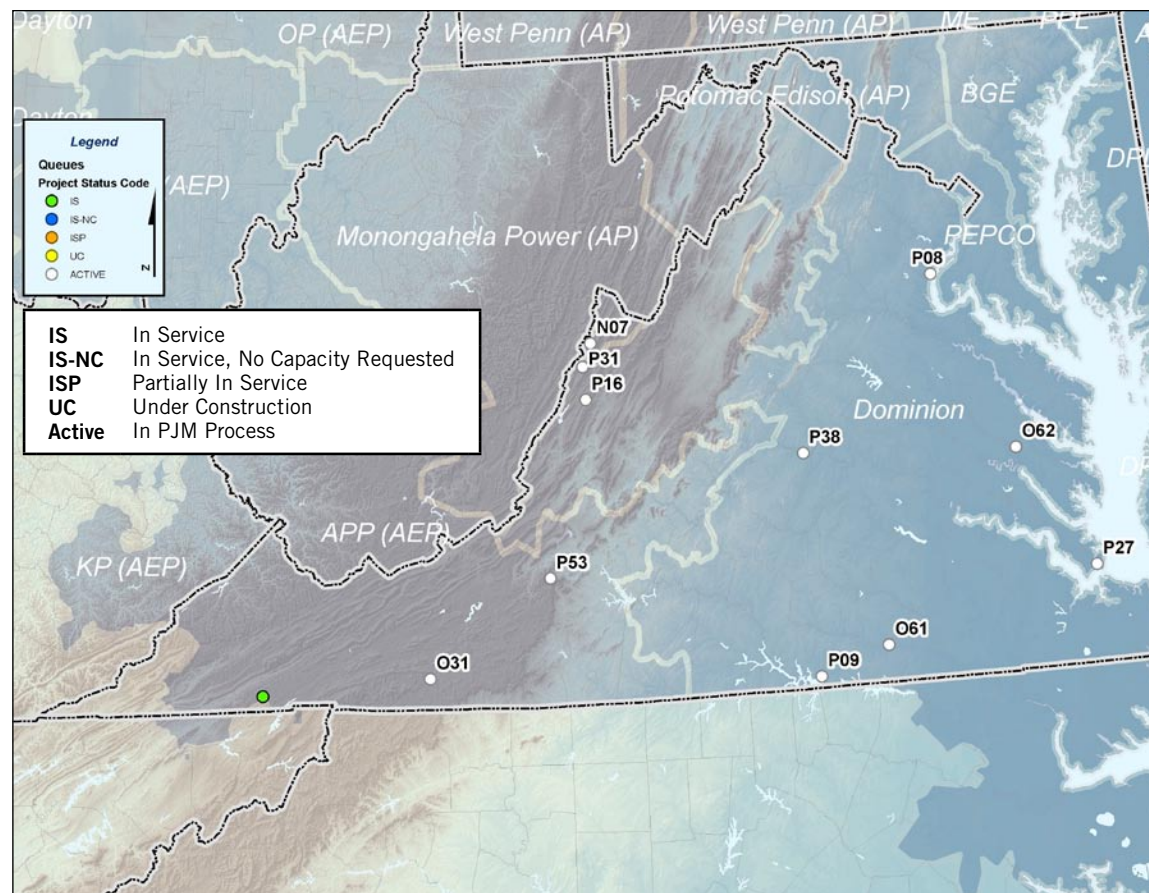


**Table 4.12.2-1: PJM Queued Generation Interconnection Requests in Virginia**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
N07	Monterey 69 kV	38	7.6	ACTIVE	12/31/07	AP	Wind
O06_DP01	Altavista 115 kV	4	4	ACTIVE	6/1/06	Dominion	Wood
O31	Fries 12 kV	5.21	5.21	ACTIVE	6/1/06	AEP	Hydro
O61	Lawrenceville 34.5 kV	8	8	ACTIVE	1/31/07	Dominion	Methane
O62	Shackleford 34.5 kV	8	8	ACTIVE	10/31/06	Dominion	Methane
P08	Possum Point	600	600	ACTIVE	5/1/09	Dominion	Natural Gas
P09	Kerr Dam 115 kV	91	91	ACTIVE	9/30/08	Dominion	Hydro
P16	Bath County	340	340	ACTIVE	4/1/06	Dominion	Hydro
P27	Winchester 34.5 kV	13	13	ACTIVE	12/31/06	Dominion	Methane
P38	Bremo 230 kV	675	675	ACTIVE	7/1/10	Dominion	Natural Gas
P53	Bent Mtn. 138 kV	81	16.2	ACTIVE	12/31/08	AEP	Wind

Map 4.12.2-1 shows the location of each queued request in Table 4.12.2-1.

Map 4.12.2-1: Location of Queued Generation Projects in the Virginia Area Served by PJM



### 4.12.3 – Transmission Expansion Plans

Major transmission system expansions planned for Virginia are summarized in **Table 4.12.3-1** and shown in **Map 4.12.3-1**. As **Table 4.12.3-1** notes, the key expansion plan driver is baseline reliability.

**Map 4.12.3-1: Major PJM RTEP Upgrades in Virginia**

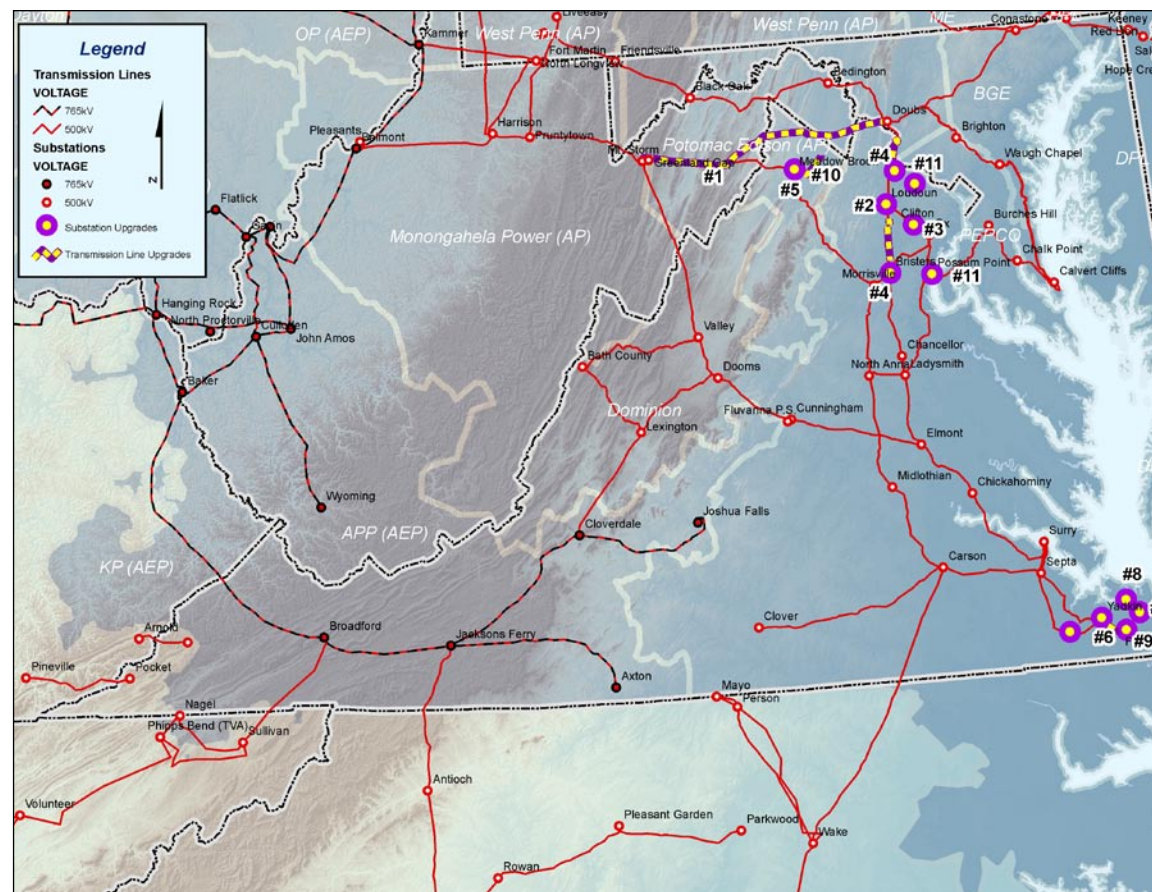


Table 4.12.3-1: Major PJM RTEP Upgrades in Virginia

		System Upgrade Drivers											
		Baseline Upgrades				Network Upgrades		TOI Upgrade	Transmission Service				
Map Ref.	Limiting Facility / Upgrade Description	Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TO – Local Issue	Long-term Firm Transmission Service	Date / Status	Cost	TO Zones	States
1	Mt.Storm-Doubs 500 kV Circuit											Dominion, AP	MD, VA, WV
	Upgrade Mt. Storm - Doubs 500 kV	X								June 2006	\$ 1.7 M	Dominion	WV
2	Loudoun 500 kV Substation											Dominion	VA
	Install 150 MVAR capacitor at Loudoun 500 kV	X								June 2006	\$ 1.5 M	Dominion	VA
3	Clifton 500-230 kV Substation											Dominion	VA
	Install 500/230 kV transformer at Clifton and Clifton 230 kV 150 MVAR capacitor	X								June 2006	\$ 7.01 M	Dominion	VA
4	Bristers 230 kV Circuit											Dominion	VA
	Install 500/230 kV transformer at Bristers; build new 230 kV Bristers - Gainesville circuit, upgrade two Loudoun - Brambleton circuits	X								May 2009	\$ 20.1 M	Dominion	VA
5	Meadowbrook 500/138 kV Transformer											AP	VA
	Install fourth Meadowbrook 500/138 kV transformer	X								May 2008	\$ 7 M	AP	VA
6	Suffolk-Yadkin 500 kV Circuit											Dominion	VA
	Install Suffolk 500/230 kV transformer, reconfigure Suffolk 500 kV, reconfigure Yadkin 500 kV, connect Septra - Fentress 500 kV into Yadkin 500 kV	X								June 2009	\$ 12.55 M	Dominion	VA
7	Landstown 230 kV Substation											Dominion	VA
	Install 150 MVAR capacitor at Landstown	X								June 2009	\$ 1.22 M	Dominion	VA

**Table 4.12.3-1: Major PJM RTEP Upgrades in Virginia, Continued**

		System Upgrade Drivers											
		Baseline Upgrades				Network Upgrades		TO Upgrade	Transmission Service				
Map Ref.	Limiting Facility / Upgrade Description	Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TO – Local Issue	Long-term Firm Transmission Service	Date / Status	Cost	TO Zones	States
8	Greenwich 230 kV Substation											Dominion	VA
	Install 150 MVAR capacitor at Greenwich 230 kV	X								June 2009	\$ 1.22 M	Dominion	VA
9	Fentress 230 kV Substation											Dominion	VA
	Install 150 MVAR capacitor Fentress 230 kV	X								June 2009	\$ 1.05 M	Dominion	VA
10	Double Tollgate-Old Chapel 138 kV Circuit											AP	VA
	Rebuild of the Double Tollgate - Old Chapel 138 kV line with 954 ACSR conductor	X								June 2009	\$ 1.95 M	AP	VA
11	Ashburn 230 kV, Dranesville 230 kV, Possum Pt. 115 kV Substations											Dominion	VA
	Install a total of 333 MVAR of capacitors	X								2006	\$ 2.6 M	Dominion	VA

#### 4.12.3 – Other Related RTEP Initiatives

##### ***Wind Generation Projects***

Wind projects generally develop in those geographic areas with favorable wind frequency and duration characteristics. At present, two wind projects are queued in PJM's RTEP interconnection process for development in Virginia: Project N07 near Monterey 69 kV station and Project P53 near Bent Mountain 138 kV station, as noted in **Table 4.12.2-1** and shown in **Map 4.12.2-1**. Please refer to **Section 3.6** for additional discussion of wind generation activities in PJM.

##### ***Transmission Owner Initiated Improvements in Virginia***

AEP is constructing a 90-mile 765 kV circuit from its Wyoming 765 kV Station in West Virginia to its Jackson Ferry 765 kV Station in Southwestern Virginia. Please refer to **Section 3.8** for more specific discussion about the Wyoming-Jackson Ferry 765 kV Line.



## Section 4.13: West Virginia RTEP Overview

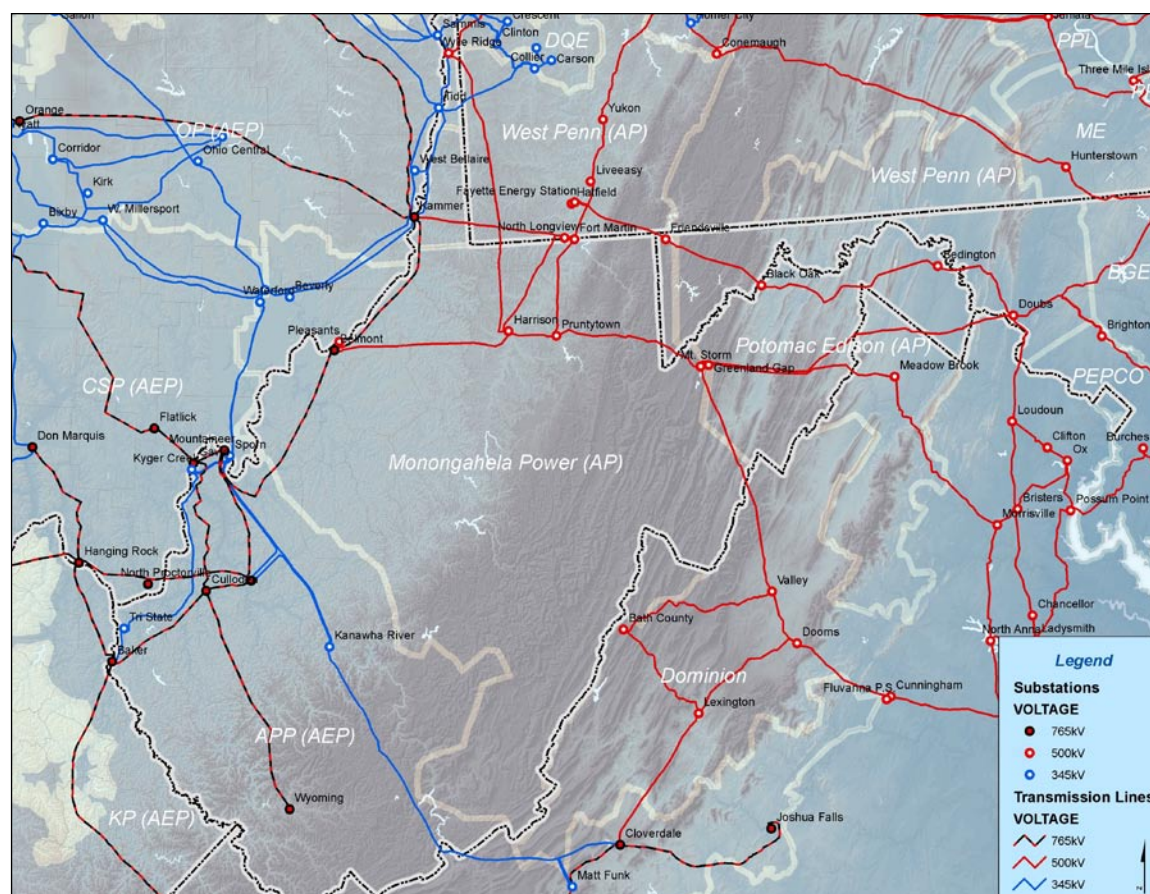
### 4.13.1 – Load and Generation

PJM operates the transmission system in West Virginia for the Monongahela Power (MP) sub-zone of Allegheny Power (AP), and the Appalachian Power (APP) sub-zone of American Electric Power (AEP) as shown in **Map 4.13.1-1**. The APP sub-zone of AEP also serves Southwestern Virginia and the extreme northeastern portion of Tennessee. The transmission system in West Virginia provides delivery service to customers in West Virginia and supports significant west to east energy transfers to major load centers to the north and east as shown in **Map 4.13.1-1**.

#### Load Growth

The forecasted 2005 summer peak load served in West Virginia by MP (AP) and APP (AEP), including the adjacent portions of northeastern Tennessee and southwestern Virginia served by these transmission owners, was 8,330 MW and has been forecasted to grow at an annual rate of 1.4 percent over the next 10 year period, reaching a forecasted 9,577 MW by the summer of 2015.

**Map 4.13.1-1: PJM Transmission System in West Virginia**



Customer load in West Virginia peaks during the winter rather than during the summer. The forecasted 2004/05 winter peak load served in West Virginia by MP (AP) and APP (AEP), including the adjacent portions of northeastern Tennessee and southwestern Virginia served by these Transmission Owners, was 9,134 MW and has been forecasted to grow at an annual rate of 1.3 percent over the next 10 year period, reaching a forecasted 10,410 MW by the winter of 2014/14.

The load served by the Potomac Edison (PED) sub-zone of Allegheny Power (AP) in northern Virginia and western Maryland is included in the **Section 4.5** discussion for Maryland and D.C.

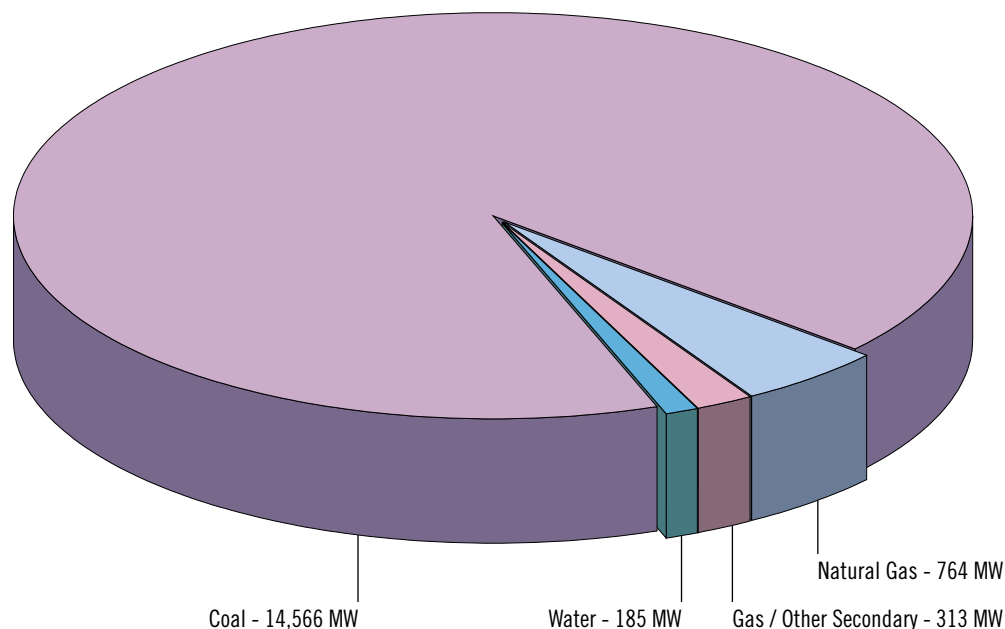
The forecasted loads cited above were modeled in the power flow studies used to develop PJM's RTEP through December 2005.

PJM's RTEP includes transmission upgrades in West Virginia to meet expected 2009 peak load conditions. Beyond 2009, additional transmission system expansion are expected to be needed to meet expected peak load requirements.

#### **Existing Generating Capacity**

**Figure 4.13.1-1** provides a snapshot of the existing installed capacity by fuel type in the PJM Transmission Owner zones that serve West Virginia.

**Figure 4.13.1-1: Existing Installed Capacity by Fuel Type in West Virginia**



#### 4.13.2 – Generator Interconnection Requests

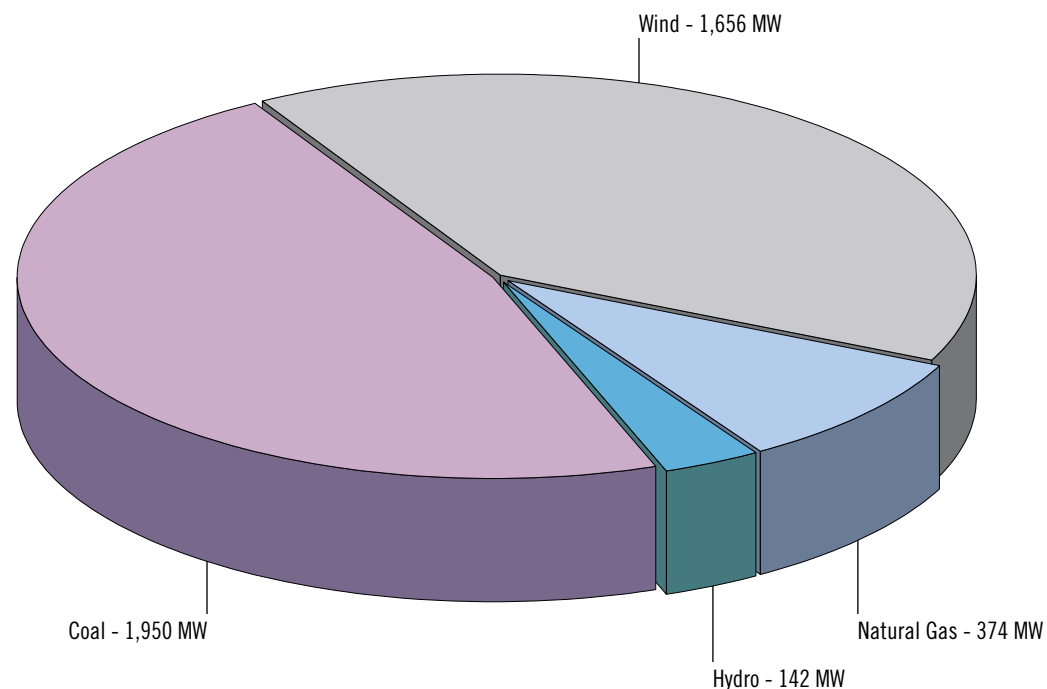
PJM has processed almost 50 interconnection requests for new generating resources in West Virginia since the integration of AP into PJM in 2002 and the integration of AEP into PJM in October 2004.

Status	# of Projects	MW
In-Service	6	551
Under Construction	2	360
Active (Under Study)	15	3211
Withdrawn	26	11041
<b>TOTAL</b>	<b>49</b>	<b>15163</b>

**Table 4.13.2-1** includes queued generation requests in Queue A through Queue P that are under construction or active in PJM's RTEP interconnection process. A status code of "IS-NC" or "ISP" denotes a generating resource that is in-service but has not achieved full capacity status. Resources fully in-service (designated "IS") are included in the summary tabulation above, but are not separately enumerated in **Table 4.13.2-1**. Only transmission enhancements associated with generator interconnection requests in Queue A through Queue N are included in the current RTEP. Interconnection requests in Queue O and Queue P are presently in the Feasibility Study or System Impact Study phase of interconnection analysis.

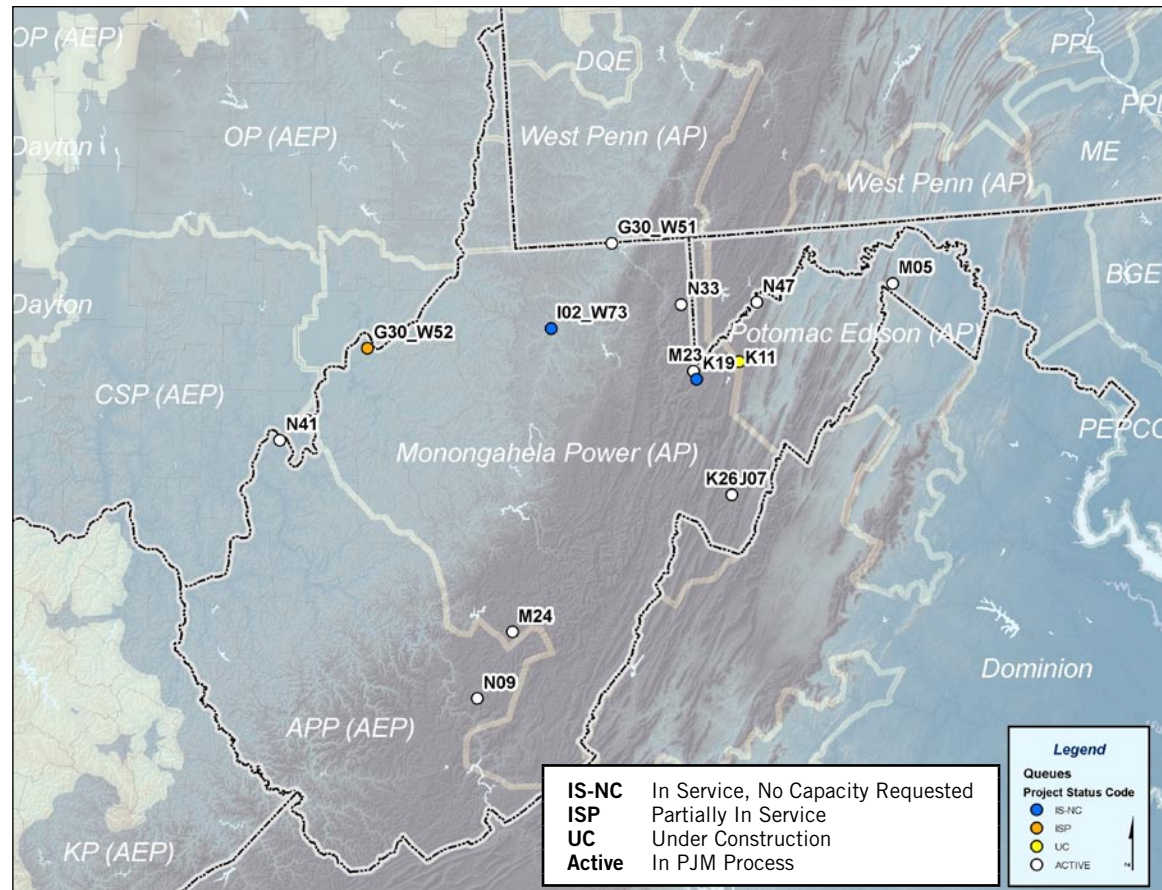
**Figure 4.13.2-1** shows the capacity rights requested by fuel type for those generator interconnection requests in Queue A through P. that are in-service, under construction or active in PJM's interconnection process.

**Figure 4.13.2-1: Capacity Rights by Fuel Type for Queued Generation Interconnection Requests in Virginia**



Map 4.13.2-1 shows the location of each queued request in the Table 4.13.2-1.

Map 4.13.2-1: Generator Interconnection Requests in PJM Queues in West Virginia



**Table 4.13.2-1: Queued Generation Interconnection Requests in West Virginia**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
G30_W51	Fort Martin 500 kV	600	600	ACTIVE	6/1/08	AP	Coal
G30_W52	Oak Grove 138 kV	54	54	ISP	6/1/03	AP	Natural Gas
H21_W68	Greenland Gap 500 kV	300		UC	9/1/06	AP	Wind
I02_W73	Harrison 500 kV	35	35	IS-NC	9/22/04	AP	Coal
J07	North Franklin 138 kV	200		ACTIVE	11/1/06	AP	Wind
K11	Greenland Gap 500 kV	60	60	UC	9/1/06	AP	Wind
K19	Backbone Mountain 138 kV	66	13.2	IS-NC	6/1/01	AP	Wind
K26	North Franklin 138 kV	40	40	ACTIVE	11/1/06	AP	Wind
M23	Henry 138 kV	150	30	ACTIVE	12/1/06	AP	Wind
M24	Grassy Falls	200	40	ACTIVE	9/1/06	AP	Wind
N09	Grassy Falls 138 kV	90	90	ACTIVE	3/31/08	AEP	Coal
N33	Afton 138 kV	60	12	ACTIVE	12/1/06	AP	Wind
N41	Mountaineer 765 kV	1200	1200	ACTIVE	5/1/10	AEP	Coal
N47	Beryl 138 kV	135	27	ACTIVE	11/1/07	AP	Wind
O32	Mountaineer 765 kV	25	25	ACTIVE	12/31/05	AEP	Coal
O37	Belle 46 kV	14	14	ACTIVE	6/1/06	AEP	Natural Gas
O57	Kanawha 138 kV	142	142	ACTIVE	6/1/06	AEP	Hydro
P52	Albright 138 kV	80	16	ACTIVE	12/31/08	AP	Wind
P58	Canaan - Seneca 138 kV	150	30	ACTIVE	12/1/07	AP	Wind
P59	Belington 138 kV	125	25	ACTIVE	12/31/08	AP	Wind

### 4.13.3 – Transmission Expansion Plans

Major RTEP transmission system expansion planned for West Virginia are summarized in **Table 4.13.3-1** and shown in **Map 4.13.3-1**. As **Table 4.13.3-1** notes, key expansion plan drivers include baseline reliability and transmission owner local reliability issues.

**Map 4.13.3-1: Major PJM RTEP Upgrades in West Virginia**

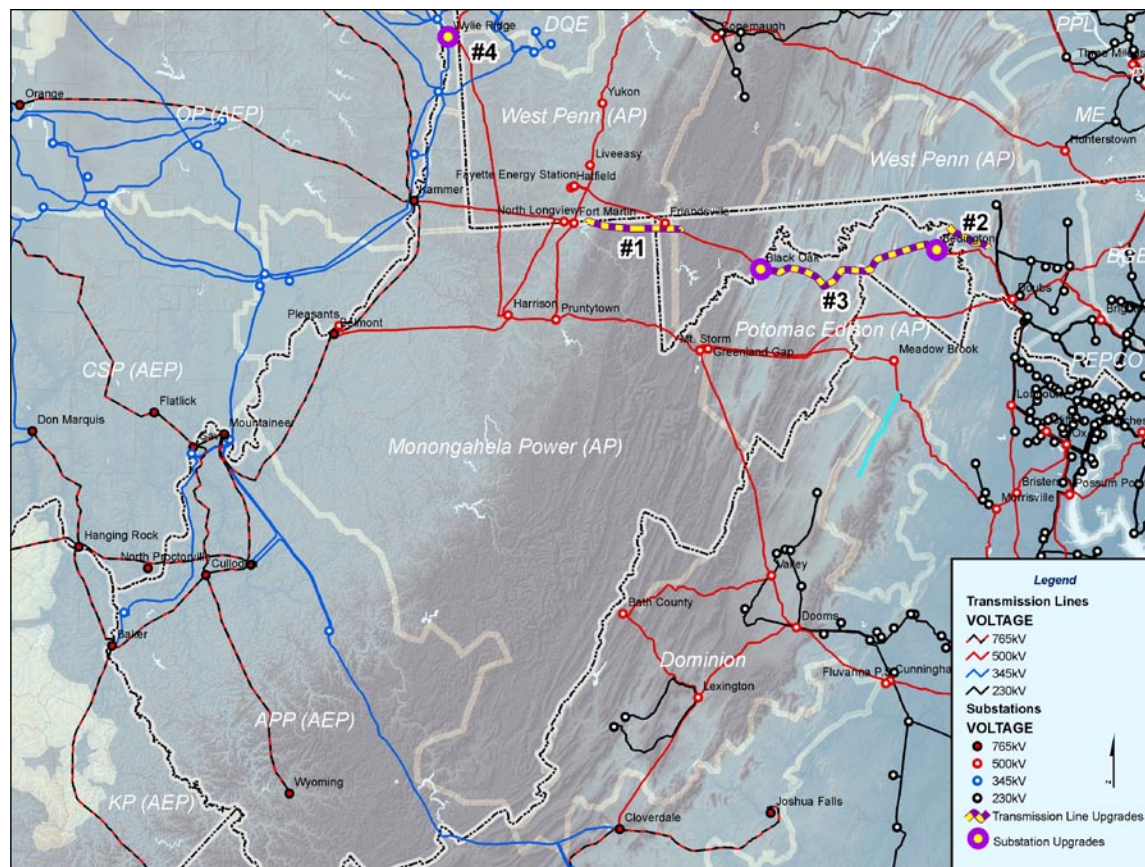


Table 4.13.3-1: Major PJM RTEP Upgrades in West Virginia

		System Upgrade Drivers											
		Baseline Upgrades				Network Upgrades		TOI Upgrade	Transmission Service				
Map Ref.	Limiting Facility / Upgrade Description	Baseline Load Growth/ Deliverability & Reliability	Congestion Relief – Economic	Operational Performance	Generator Deactivation	Generation Interconnection	Merchant Transmission Interconnection	TO – Local Issue	Long-term Firm Transmission Service	Date / Status	Cost	TO Zones	States
1	Lake Lynn-Brandonville Junction-Hazelton 138 kV Circuit											AP	WV
	Lake Lynn-Brandonville JCT-Hazelton, Reconductor 138 kV line							X		June 2005	\$ 4.426 M	AP	WV
2	Marlowe-Boonesboro 138 kV Circuit											AP	WV
	Marlowe - Boonesboro - Convert 138 kV line MBO to 230 kV							X		October 2005	\$ 4.2 M	AP	WV
3	Bedington-Black Oak 500 kV Circuit											Dominion, AP	MD, VA, WV
	Install -100/+525 MVAR dynamic reactive device at Black Oak	X								June 2008	\$ 35 M	AP	WV
	Install fourth Bedington 500/138 kV transformer	X								May 2009	\$ 7 M	AP	WV
	Upgrade Mt. Storm - Doubs 500 kV	X								June 2006	\$ 1.7 M	Dominion	WV
4	Wylie Ridge 500/345 kV Transformer											AP	WV
	Install third Wylie Ridge 500/345 kV transformer	X								June 2007	\$ 12 M	AP	WV

#### 4.13.4 – Other Related RTEP Initiatives

##### ***Wind-powered Generation Projects***

Wind projects generally develop in those geographic areas with favorable wind frequency, speed and duration characteristics. Such favorable conditions are found along the mountain ridges of West Virginia, as shown in **Map 4.13.4-1** and summarized in **Table 4.13.4-1**. Please see **Section 3.5** for additional discussion of wind-powered generation projects in PJM.

**Table 4.13.4-1: Queued Wind-powered Generation Interconnection Requests in West Virginia**

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
H21_W68	Greenland Gap 500 kV	300		UC	9/1/06	AP	Wind
J07	North Franklin 138 kV	200		ACTIVE	11/1/06	AP	Wind
K11	Greenland Gap 500 kV	60	60	UC	9/1/06	AP	Wind
K19	Backbone Mountain 138 kV	66	13.2	IS-NC	6/1/01	AP	Wind
K26	North Franklin 138 kV	40	40	ACTIVE	11/1/06	AP	Wind
M23	Henry 138 kV	150	30	ACTIVE	12/1/06	AP	Wind
M24	Grassy Falls	200	40	ACTIVE	9/1/06	AP	Wind
N33	Afton 138 kV	60	12	ACTIVE	12/1/06	AP	Wind
N47	Beryl 138 kV	135	27	ACTIVE	11/1/07	AP	Wind
P52	Albright 138 kV	80	16	ACTIVE	12/31/08	AP	Wind
P58	Canaan - Seneca 138 kV	150	30	ACTIVE	12/1/07	AP	Wind
P59	Belington 138 kV	125	25	ACTIVE	12/31/08	AP	Wind

**Map 4.13.4-1:** Location of Wind Generation Interconnection Requests in West Virginia

